BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2018-318-E

In the Matter of:	)	
	)	
Application of Duke Energy Progress,	)	**REBUTTAL TESTIMONY OF**
LLC for Authority to Adjust and Increase	)	**ROBERT B. HEVERT FOR**
Its Electric Rates and Charges	)	**DUKE ENERGY PROGRESS, LLC**

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I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME, AFFILIATION, AND BUSINESS ADDRESS.

A. My name is Robert B. Hevert. I am a Partner at ScottMadden, Inc. ("ScottMadden"). My business address is 1900 West Park Drive, Suite 250, Westborough, Massachusetts, 01581.

Q. ARE YOU THE SAME ROBERT B. HEVERT WHO SUBMITTED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I submitted Direct Testimony ("Direct Testimony") before the Public Service Commission of South Carolina ("Commission") on behalf Duke Energy Progress, LLC ("Duke Energy Progress" or the "Company").

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my Rebuttal Testimony is to respond to the direct testimonies of Mr. David C. Parcell, who testifies on behalf of the South Carolina Office of Regulatory Staff ("ORS"); Ms. Billie S. LaConte, who testifies on behalf Nucor Steel – South Carolina ("Nucor"); and Mr. Steve W. Chriss, who testifies on behalf of Walmart Inc. ("Walmart") as their testimony relates to the Return on Equity ("ROE"). My Rebuttal Testimony also responds to the direct testimony of Mr. Zachary J. Payne, who testifies on behalf of ORS, as his testimony relates to the return on certain accounting deferrals.

II. SUMMARY AND OVERVIEW OF TESTIMONY

Q. BEFORE ADDRESSING THE SPECIFIC ISSUES SURROUNDING THE COMPANY'S PROPOSED RETURN ON EQUITY, DO YOU HAVE ANY PRELIMINARY OBSERVATIONS REGARDING ORS'S OVERALL PROPOSAL, AND THE IMPLICATIONS FOR THE COMPANY IF THAT PROPOSAL WERE TO BE ADOPTED BY THE COMMISSION?

A. Yes, I do. Without addressing the merits of ORS's position (other than the Return on Equity, and certain of Mr. Payne's recommendations), I understand that in aggregate, ORS's recommendations would disallow about $38.11 million of the Company's $68.67 million request.[1] That is, ORS would disallow more than 55.00 percent of the Company's proposal. Further, ORS recommends disallowing approximately $333.50 million of the Company's proposed $635.04 million deferred coal ash management costs.[2] In addition to these reductions, ORS witness Payne has made a proposal regarding the treatment of certain accounting deferrals that presents a departure from fundamental principles of corporate finance, adoption of which would tend to elevate the risks facing the Company, and, accordingly, increase its cost of capital, both debt and equity. I note that Mr. Parcell relies in part on the availability of deferrals to support his unduly low ROE

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1 Direct Testimony of Kelvin L. Major, at 17.
2 Direct Testimony of Dan J. Wittliff, BCEE, at 9.

recommendation, a position that appears to be at odds with the actual effect of the ORS's deferral proposal.

ORS's position, and the increased risk of a potential departure from the constructive regulatory environment that has prevailed in South Carolina, presents meaningful risks to debt and equity investors. Simply, investors may be concerned with the risk that ORS's positions may be precedent-setting, especially regarding coal ash cost recovery. Although ORS would disallow a substantial portion of the Company's request, those costs remain and, along with the Company's planned capital investments, must be funded. In my view, and as Mr. Sullivan explains, if ORS's positions were adopted, the Company's ability to fund ongoing operations and capital investments from operating cash flow would be substantially diminished. That reduced cash flow would require Duke Energy Progress to access external debt and equity, even as its financial integrity comes under pressure. At the same time, the Company would have less operating cash flow to service its existing financial obligations. The likely result would be more external capital raised at higher costs, all to the detriment of customers.

We cannot underestimate the importance to investors of a consistent and constructive regulatory environment. Equity analysts are indeed concerned with those risks; the same is true for the analysts that rate the Company's debt. In fact, 50.00 percent of the factors that Moody's Investor Service considers in determining credit ratings are related to the nature of regulation.[3] From that perspective, it is clear ORS's recommendation implies a level of risk that would negatively affect both debt and equity investors and would increase the cost of capital to customers.

Q. PLEASE PROVIDE A SUMMARY OVERVIEW OF THE CONCLUSIONS AND RECOMMENDATIONS CONTAINED IN YOUR REBUTTAL TESTIMONY.

A. It is important to keep in mind that no one financial model is more reliable than others at all times and under all market conditions. At times, certain models' assumptions become incompatible with market conditions, and their results do not make practical sense. Consequently, we cannot always take model results as given, and assume their results are reasonable measures of the Cost of Equity. Rather, we should apply reasoned judgment in vetting model assumptions, and in assessing the reasonableness of their results. That judgment may lead to the conclusion that the emphasis applied to a particular method in a prior proceeding or under different market conditions is not appropriate in the current instance.

Regarding the Company's Cost of Equity, none of the analyses provided or positions taken by either Mr. Parcell or Mr. Chriss have caused me to revise my recommended range (10.25 percent to 11.00 percent), or my specific recommendation (10.75 percent). For example, Mr. Parcell supports his

3 Moody's Investors Service, *Rating Methodology, Regulated Electric and Gas Utilities*, December 23, 2013, at 6.

recommendations by reference to authorized ROEs, suggesting those returns have trended downward over time. If we consider individual cases over a relevant timeframe (rather than annual averages over long periods), there is no downward trend. There certainly is no basis to conclude ROEs in the range of 9.10 percent to 9.50 percent are supported by returns authorized for other vertically integrated electric utilities. Other analyses presented by Mr. Parcell are similarly flawed.

Looking to all model results, and considering the quantitative and qualitative data presented throughout my Rebuttal Testimony, I continue to recommend an ROE in the range of 10.25 percent to 11.00 percent, with a point estimate of 10.75 percent. From that perspective, I believe the Company's proposed ROE of 10.50 percent is reasonable, if not conservative.

Lastly, I disagree with Mr. Payne's recommendation to eliminate the return on certain of the Company's accounting deferrals. My Rebuttal Testimony explains that Mr. Payne's recommendation fails to recognize the unnecessary and negative financial effects of doing so. I also note that Mr. Parcell's recommendation to reduce the Company's ROE in connection with Commission-approved deferral accounts would further penalize the Company, and compound the adverse financial effects of ORS's recommendations.

Q. PLEASE NOW PROVIDE AN OVERVIEW OF YOUR RESPONSE TO MR. PARCELL REGARDING THE APPROPRIATE RETURN ON EQUITY AND CAPITAL STRUCTURE.

A. Quite simply, Mr. Parcell's recommendation is below any reasonable measure of the Company's Cost of Equity. As discussed throughout my Rebuttal Testimony, Mr. Parcell's recommendation (1) is far below those authorized for other utilities nationally and in South Carolina, (2) does not recognize the risks faced by Duke Energy Progress, and (3) does not appropriately reflect the evolving capital market environment. As discussed in my Direct Testimony, increases in interest rates and volatility are indicative of increased risk faced by the Company, and therefore, the Cost of Equity.[4]

In this proceeding, Mr. Parcell gives considerable weight to the Discounted Cash Flow ("DCF") method, even though it produces ROE estimates 55 basis points and more below the returns authorized for other electric utilities.[5] Because Mr. Parcell gives considerable weight to his DCF-based results, it is not surprising his recommendation falls so far below currently authorized returns. In fact, Mr. Parcell's 9.30 recommendation falls in the bottom 6th percentile of returns authorized for vertically integrated electric utilities since January 2016. As Chart

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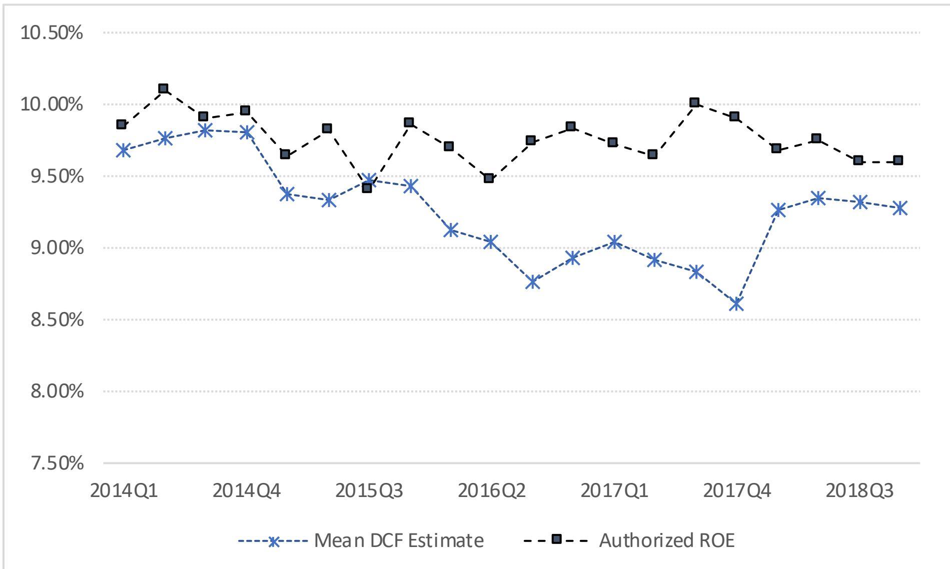
4 Direct Testimony of Robert B. Hevert, at 68-74.

5 The average authorized ROE for vertically integrated electric utilities from January 1, 2016 – February 15, 2019 is 9.76 percent. Source: Regulatory Research Associates. Mr. Parcell's DCF-based estimates range from 6.90 percent to 9.20 percent. *See* Exhibit DCP-2, Schedule 8, page 4.

1 demonstrates, for several years the DCF method has produced unreasonably low estimates of the Cost of Equity, and regulatory decisions have reflected that understanding.

Chart 1: Authorized ROEs vs. DCF Estimates[6]



As discussed in more detail later in my Rebuttal Testimony, Mr. Parcell's recommendation cannot be supported by the reasonable application of financial models, nor can it be justified by current or expected market conditions. Rather, his recommendation is unduly low and if adopted, would increase Duke Energy Progress' regulatory and financial risk, diminish its ability to compete for capital,

6 DCF results based on quarterly average stock prices, Earnings Per Share growth rates from Value Line, Zacks, and First Call; assumes Revised Proxy Group. Authorized ROEs are quarterly averages for vertically integrated electric utilities; source: S&P Global Market Intelligence. Please note that 2017 Q3 and 2016 Q2 included only one ROE decision.

and have the counterproductive effect of increasing Duke Energy Progress' overall cost of capital, ultimately to the detriment of its customers.

The difference between Mr. Parcell's recommendation and the returns available to other utilities raises two concerns. First, Duke Energy Progress must compete with other companies, including utilities, for the long-term capital needed to provide safe and reliable utility service. Given the choice between two similarly situated utilities, one with a return that falls far below industry averages and another with a return that more closely aligns with returns available to other utilities, investors will choose the latter. That is a particular concern for the Company, given its risk profile, its need to access external capital, and the implication of ORS's overall recommendations. If the Commission were to approve an ROE in the range recommended by Mr. Parcell, investors would receive a lower return with greater risk than would be available from other utilities. A likely outcome would be increasing reluctance on the part of investors to provide capital at reasonable costs and terms.

Second, although no regulatory commission sets returns solely by reference to those authorized elsewhere, authorized returns do provide observable and measurable benchmarks against which return recommendations may be assessed. In my experience, regulatory commissions generally consider the same types of market, methodological, and risk factors at issue in this proceeding. They recognize that financial models are important tools in determining returns and appreciate that because all models are subject to assumptions, no one method is most reliable at all times, and under all conditions.

As discussed throughout my Rebuttal Testimony, that holds true in this case. Even if we focus on a single method, it remains critically important to apply reasoned judgment to determine where the Cost of Equity falls within that model's range of results. Just as investors consider company-specific and general market factors in developing their return requirements, we should do the same. Those considerations, and that judgment, lead to the conclusion that Mr. Parcell's ROE recommendation is unduly low.

Lastly, Mr. Parcell has not explained what has changed so significantly that the Company's Cost of Equity has fallen by 80.00 basis points since its last rate proceeding. According to Mr. Parcell's Schedule 2, the Prime Rate, Treasury bill yields, and Treasury Bond yields (ten-year) all were higher in 2018 than in 2013. The only measures of relevance to Duke Energy Progress that have decreased are utility bond yields, and even then by only 20.00 to 30.00 basis points (that difference declined to only seven to eleven basis points in January 2019). Putting aside the modest decrease (30.00 basis points in bond yields as opposed to 80.00 basis points in Mr. Parcell's ROE recommendation), utility bond credit spreads tend to move inversely with interest rates. So, it is not surprising that the utility bond yields are not higher now than they were in 2013. It certainly does not support Mr. Parcell's position.

What clearly has changed is the market environment in which the Company must compete for capital. In September 2012, the Federal Reserve began its third round of "Quantitative Easing", in which it would purchase $40 billion of securities each month, and would keep the Federal Funds rate near 0.00 percent. In December 2013, the Federal Reserve increased its monthly purchases to $85 billion. The specific intent of those policies was to lower long-term interest rates.

Now, not only has the Federal Reserve ceased its purchases of securities, it has begun the process of monetary policy "normalization".[7] That normalization includes increases in the Federal Funds rate and unwinding the $4.5 trillion of assets it acquired during Quantitative Easing. The point simply is that the Federal Reserve now is "normalizing" the policies it put in place during the Company's last rate proceeding, and it would be a mistake to assume that the Company's Cost of Equity has dramatically fallen as a result.

[7] As the Federal Reserve explains: "The global financial crisis that began in 2007 had profound effects on the U.S. economy and other economies around the world. To support a return to the Federal Reserve's statutory goals of maximum employment and price stability, the Federal Open Market Committee ("FOMC") reduced short-term interest rates to nearly zero and held them at that exceptionally low level for seven years. The FOMC also undertook large-scale open-market purchases of longer-term U.S. Treasury securities and mortgage-backed securities to put downward pressure on longer-term interest rates. The term "normalization of monetary policy" refers to plans for returning both short-term interest rates and the Federal Reserve's securities holdings to more normal levels." *See* https://www.federalreserve.gov/faqs/what-does-federal-reserve-mean-when-it-talks-about-normalization-of-monetary-policy.htm. In the minutes of its January 29-30, 2019 FOMC Meeting, the FOMC noted that although it continues to view changes in the federal funds target rate as the "primary means of adjusting monetary policy", it also would adjust the details of its balance sheet normalization based on economic and financial developments.

Q. IS MR. PARCELL'S RECOMMENDATION CONSISTENT WITH AUTHORIZED ROES FOR VERTICALLY INTEGRATED ELECTRIC UTILITIES SIMILAR TO DUKE ENERGY PROGRESS?

A. No, it is not. As noted earlier, Mr. Parcell's 9.30 percent ROE recommendation falls in the bottom 6th percentile of returns authorized for vertically integrated electric utilities nationally (*see* Chart 2 below). Further, if we consider vertically integrated electric utilities in South Carolina and U.S. states geographically near South Carolina, Mr. Parcell's recommendation falls approximately 55.00 to 125.00 basis points below the ROEs recently authorized in those states. My recommended range, however, is consistent with ROEs authorized in nearby jurisdictions.[8]

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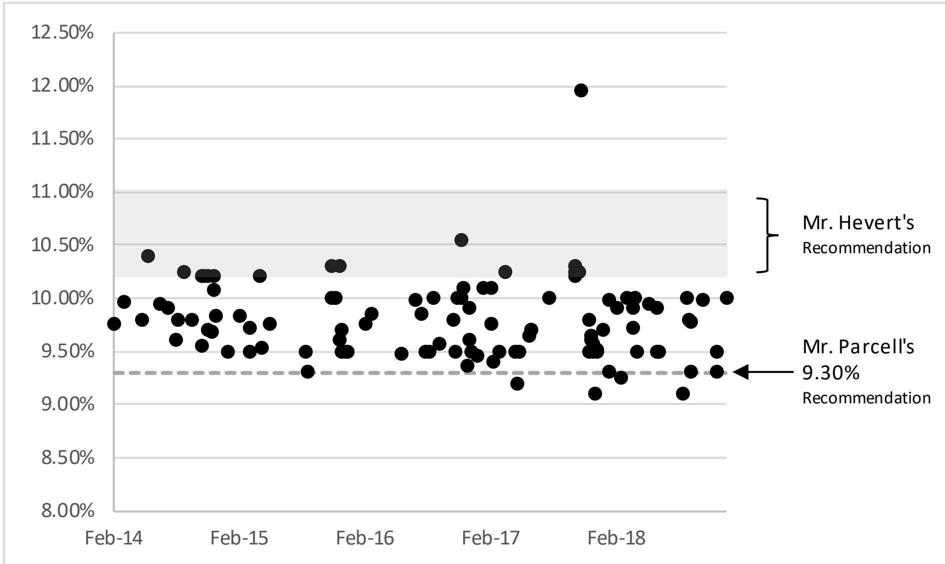
[5] That is, Florida, Mississippi, North Carolina, South Carolina, and Tennessee. Georgia has not had a general rate case between January 1, 2014 and February 15, 2019. Since 2014, ROEs for vertically integrated electric utilities authorized in these states ranged from 9.85 percent to 10.55 percent, with an average of 10.10 percent.

Chart 2: Vertically Integrated Authorized ROEs and Witness Recommendations (2014 – 2019)[9]



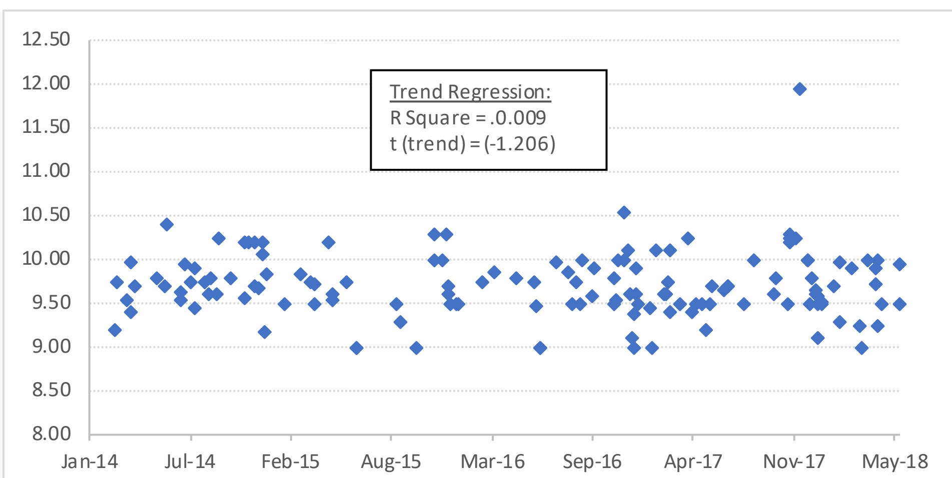
For the reasons discussed above, Mr. Parcell's unduly low recommendation cannot be attributed to capital market conditions and as explained below, there is no reason to conclude authorized returns recently have followed a downward trend. More important, and as Mr. Sullivan explains in his Rebuttal Testimony, the Company requires continuing and efficient access to the long and short-term capital markets. Rather than enabling that access, Mr. Parcell's unduly low ROE recommendation would be a constraint.

9 Source: Regulatory Research Associates ("RRA"). Authorized ROEs for vertically integrated utilities from January 2014 through February 15, 2019. ROEs authorized for generation-only (*i.e.*, "limited issue") rate riders are excluded.

Q. DO YOU HAVE ANY OBSERVATIONS REGARDING THE ANNUAL AVERAGE AUTHORIZED RETURNS DISCUSSED ON PAGES 15-16 OF MR. PARCELL'S DIRECT TESTIMONY?

A. Yes, I do. Average annual data obscures variation in returns and does not address the number of cases or the jurisdictions issuing orders within a given year. For example, one year may have fewer cases decided, and a relatively large portion of those cases decided by a single jurisdiction. As shown in Chart 3, if all authorized ROEs are charted (including both distribution and vertically integrated electric rate cases), rather than the simple average, there is no meaningful trend since 2014; time explains less than 1.00 percent of the change in ROEs, and the trend is statistically insignificant.

Chart 3: Electric Authorized Returns (2014-2019)[10]



[10] Source: Regulatory Research Associates. Excludes limited issue rate riders and ROEs authorized as part of the Illinois formula rate proceedings.

From a slightly different perspective, the recent fluctuations around average annual authorized returns are well within one standard deviation (see Table 1, below). Either way, there is no reason to conclude authorized returns have fallen since 2014.

Table 1: Mean and Standard Deviation of Authorized Returns (2014-2019)[11]

Year	Average	Standard Deviation
2014	9.78%	0.30
2015	9.64%	0.38
2016	9.66%	0.35
2017	9.74%	0.48
2018	9.60%	0.32

Q. HAS THE COMMISSION RECOGNIZED THE IMPORTANCE OF CONSIDERING MULTIPLE METHODS TO SET AUTHORIZED ROES?

A. Yes, it has. In its *Order Addressing South Carolina Electric & Gas Nuclear Dockets*, *the* Commission explained "it is appropriate and reasonable to consider a range of estimates under various methodologies in order to more accurately estimate [South Carolina Electric & Gas's] cost of equity", and that relying on a single analytical method is "inconsistent with decisions reached by regulatory

[11] Source: Regulatory Research Associates. Excludes limited issue rate riders.

commissions over the past several years and departs from the normal practice of estimating the Cost of Equity for utilities."[12]

Commissions in other regulatory jurisdictions, such as Hawaii, Maryland, Massachusetts, and North Carolina have made similar findings.[13] For example, in its recent order in Baltimore Gas and Electric Company's rate case, the Maryland Public Service Commission ("MPSC") discussed the importance of considering multiple analytical methods, given the complexity of determining the required ROE:

> The ROE witnesses used various analyses to estimate the appropriate return on equity […] including the DCF model, the IRR/DCF, the traditional CAPM, the ECAPM, and risk premium methodologies. Although the witnesses argued strongly over the correctness of their competing analyses, we are not willing to rule that there can be only one correct method for calculating an ROE. Neither will we eliminate any particular methodology as unworthy of basing a decision. The subject is far too complex to reduce to a single mathematical formula. That conclusion is made apparent, in practice, by the fact that the expert witnesses used discretion to eliminate outlier returns that they testified were too high or too low

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12 Public Service Commission of South Carolina, Docket Nos. 2017-207-E, 2017-305-E, and 2017-370-E, Order No. 2018-804, Order Addressing South Carolina Electric & Gas Nuclear Dockets, at 88-89. [clarification added]

13 *See*, for example: (1) Public Utilities Commission of the State of Hawaii, Docket No. 7700, Order No. 13704 in Docket No. 7700, *In the Matter of the Application of Hawaiian Electric Company, Inc. For Approval of Rate Increases and Revised Rate Schedules and Rules*, December 28, 1994 at 92; (2) The Public Service Commission of Maryland, Case No. 9418, *In the Matter of the Application of Potomac Electric Power Company for Adjustments to its Retail Rates for the Distribution of Electric Energy*, Order No. 87884, at 97; (3) The Commonwealth of Massachusetts Department of Public Utilities, *Investigation by the Department of Public Utilities*, Docket D.P.U. 15-155, September 30, 2016, at 376-378; and (4) State of North Carolina Utilities Commission, *In the Matter of Application of Public Service Company of North Carolina, Inc. for a General Increase in its Rates and Charges*, Docket No. G-5, Sub 565, *Order Approving Rate Increase and Integrity Management Tracker*, October 28, 2016, at 35-36.

> to be considered reasonable, even when using their own preferred methodologies.[14]

In its November 15, 2018 *Order Directing Briefs*, the Federal Energy Regulatory Commission ("FERC") found that "in light of current investor behavior and capital market conditions, relying on the DCF methodology alone will not produce a just and reasonable ROE".[15] In its October 16, 2018 *Order Directing Briefs*, FERC found that although it "previously relied solely on the DCF model to produce the evidentiary zone of reasonableness…", it is "…concerned that relying on that methodology alone will not produce just and reasonable results."[16] As FERC explained, it is important to understand "how investors analyze and compare their investment opportunities."[17] FERC also explained that, although certain investors may give some weight to the DCF approach, other investors "place greater weight on one or more of the other methods…"[18] Those methods include the CAPM and the Risk Premium method, which I have applied in this proceeding.

[14] *In the matter of the application of Baltimore Gas and Electric company for adjustments to its electric and gas base rates, Public Service Commission of Maryland*, Case No. 9406, Order No. 87591, at 153. Citations omitted.

[15] Docket Nos. EL14-12-003 and EL15-45-000, *Order Directing Briefs*, 165 FERC ¶ 61,118 (November 15, 2018) at para. 34.

[16] Docket No. EL11-66-001, *et al*., *Order Directing Briefs* 165 FERC ¶ 61,030 (October 16, 2018) at para. 30.

[17] *Ibid*., at para. 33.

[18] *Ibid*., at para. 35.

Q. HAVE OTHER STATE REGULATORY COMMISSIONS DECLINED TO RELY ON THE DCF MODEL RESULTS?

A. Yes. For example, in its June 2018 *Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction*, in which it authorized a 9.90 percent ROE for Duke Energy Carolinas, the North Carolina Utilities Commission ("NCUC") noted it "carefully evaluated the DCF analysis recommendations" of the ROE witnesses (which ranged from 8.45 percent to 8.80 percent) and determined that "all of these DCF analyses in the current market produce unrealistically low results."[19] Notably, Mr. Parcell's DCF-based estimate of 9.10 percent (which weighs approximately 50.00 percent in his 9.30 percent ROE recommendation) is only 30 basis points above the range found by the NCUC to be "unrealistically low".

Q. ARE THERE ASPECTS OF THE DCF MODEL THAT MAY EXPLAIN WHY REGULATORY COMMISSIONS CURRENTLY DO NOT RELY PRINCIPALLY ON IT WHEN DETERMINING THE COST OF EQUITY?

A. Yes. The model's fundamental structure and underlying assumptions may become far removed from actual market conditions and financial practice. For example, the model assumes there will be no change, ever, in growth rates, dividend yields,

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19 State of North Carolina Utilities Commission, Docket No. E-7, Sub 1146, *In the Matter of Application of Duke Energy Carolinas, LLC, for Adjustment of Rates and Charges Applicable to Electric Utility Service in North Carolina*, Order Accepting Stipulation, Deciding Contested Issues, and Requiring Revenue Reduction, June 22, 2018, at 62.

Price/Earnings ("P/E") ratios, Market/Book ("M/B") ratios, or in the economic and market conditions that support those variables. Those assumptions, however, currently do not hold. For example, firms do not pay dividends at a constant dividend yield. Rather, continuous movements in stock prices, coupled with "sticky" dividend policies create continuous changes in dividend yields, contrary to the DCF model's assumptions.

The model's assumptions have become further removed from practice when capital market conditions are influenced by non-permanent Federal policies. That most easily can be seen when we consider that the model assumes the Cost of Equity estimated today will remain unchanged in perpetuity. That is, the model requires the Cost of Equity estimate produced today to be the same forward-looking return equity investors will require every day in the future, in perpetuity. A concern is that Federal monetary policy has had a significant, intentional effect on capital markets, dampening both interest rates and volatility. Those effects, however, will reverse with the "normalization" of monetary policy. Consequently, neither the Federal Reserve's unconventional monetary policy initiatives nor the capital market conditions they supported will remain in place in perpetuity, as the Constant Growth DCF model requires. On that basis alone we should be cautious about the weight given the DCF method.

Q. ARE THERE STRUCTURAL REASONS WHY THE CONSTANT GROWTH DCF MODEL MAY NOT ALWAYS PROVIDE RELIABLE ROE ESTIMATES?

A. Yes, there are. As explained in my Direct Testimony, the DCF model noted by the equation $k = \frac{D(1+g)}{P_0} + g \; [1]$ is derived from the longer-form present value formula:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_\infty}{(1+k)^\infty} \; [2]$$

The model, therefore, assumes investors use the present value structure to find the "intrinsic value" of common stock.[20] Consequently, the model will not produce accurate estimates of the market-required ROE if the market price diverges from the present value-based estimate of intrinsic value. That concern is not academic; differences between market prices and intrinsic valuations may arise when investors take short-term trading positions to hedge risk (*e.g.*, a "flight to safety"), to speculate (*e.g.*, momentum trades), or as temporary position to increase current income (*i.e.*, a "reach for yield").[21]

We also know investors consider other methods, including relative valuation multiples – P/E, M/B, Enterprise Value/EBITDA[22] – in their buying and selling decisions. They do so because no single financial model produces the most

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[20] Direct Testimony of Robert B. Hevert, at 19.

[21] Some investors may select relatively high dividend yield companies as a "reach for yield" in response to the shortage of investment alternatives that provide adequate yield in today's capital market, rather than investing in stocks based on their long-term return potential.

[22] Earnings Before Interest, Taxes, Depreciation, and Amortization.

accurate and reliable measure of value at all times and under all conditions. The implications of market prices diverging from DCF-based estimates of intrinsic value was studied in an article published in the Journal of Applied Finance. That article, which focused on back-tests of the Constant Growth DCF model, found that even under "ideal" circumstances:

> … it is difficult to obtain good intrinsic value estimates in models stretching over lengthy periods of time. Shorter horizon models based on five or fewer years show more promise. Any model based on dividend streams of ten years or more, whether as a teaching tool or in practice, should be used with caution since they are likely to produce low-quality estimates. [23]

In short, because the DCF model is derived from a valuation model that assumes constancy in perpetuity, it is likely to produce less reliable ROE estimates when market conditions are non-constant, and when investor practice is to consider multiple valuation methods.

Q. IS IT YOUR VIEW THAT THE DCF MODEL SHOULD BE GIVEN NO WEIGHT IN DETERMINING THE COMPANY'S COST OF EQUITY?

A. No, it is not. It is my view, however, that we should carefully consider the range of results the model produces. As discussed later in my Rebuttal Testimony, doing so fully supports my ROE range and recommendation.

[23] *See* P. McLemore, G. Woodward, and T. Zwirlein, *Back-tests of the Dividend Discount Model using Time-varying Cost of Equity*, Journal of Applied Finance, No. 2, 2015, at 19.

Q. DO YOU HAVE ANY OTHER OBSERVATIONS IN RESPONSE TO ORS'S RECOMMENDATIONS?

A. Yes, I do. ORS Witness Mr. Dan J. Wittliff recommends the Commission disallow over half (approximately $333 million of $635 million, or 52.40 percent) of the Company's requested coal ash asset retirement obligation ("ARO").[24] As I explain in my Direct Testimony, the uncertainty surrounding the eventual cost of coal ash basin closure costs, and the timing and regulatory lag associated with recovery of those costs, remains a significant risk to investors.[25] A disallowance of the magnitude Mr. Wittliff recommends would put significant pressure on the Company's cash flow and credit metrics. As Moody's notes in its most recent credit opinion for the Company, its ratings outlook for Duke Energy Progress reflects the expectation that the Company will "be able to recover the majority of its coal ash closure and remediation costs in rates".[26] It further notes a decline in the credit supportiveness from Duke Energy Progress' regulatory relationships and a decline in credit metrics are factors that could lead to a downgrade. [27]

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[24] *See* Direct Testimony of Dan J. Wittliff, at 34, Table 5.2.
[25] Direct Testimony of Robert B. Hevert, at 46.
[26] Moody's Investors Service, Credit Opinion, Duke Energy Progress, LLC, March 19, 2018, at 2.
[27] *Ibid*., at 3.

Q. PLEASE SUMMARIZE THE UPDATES YOU HAVE MADE TO THE ANALYSES PRESENTED IN YOUR DIRECT TESTIMONY.

A. I have updated many of the analyses contained in my Direct Testimony with current data as of February 15, 2019, including the Constant Growth and Multi-Stage DCF analyses, the Capital Asset Pricing Model ("CAPM"), and the Bond Yield Plus Risk Premium approach. I also I have updated my proxy group based on recent data to include Evergy, Inc.[28] I refer to this proxy group as my "Updated Proxy Group".

Q. HOW IS THE REMAINDER OF YOUR REBUTTAL TESTIMONY ORGANIZED?

A. The remainder of my Rebuttal Testimony is organized as follows:

- Section III – Responds to ORS Witness Mr. Parcell;
- Section IV – Responds to Nucor Witness Ms. LaConte;
- Section V – Responds to Walmart Witness Mr. Chriss;
- Section VI – Responds to ORS Witness Mr. Payne; and
- Section VII – Summarizes my updated analytical results and provides my conclusion.

[28] As enough time has passed since the merger between Great Plains Energy, Inc. and Westar Energy, Inc. to form Evergy, Inc. ("Evergy"), I have included Evergy in my proxy group.

III. RESPONSE TO THE DIRECT TESTIMONY OF MR. PARCELL

Q. PLEASE PROVIDE A BRIEF SUMMARY OF MR. PARCELL'S DIRECT TESTIMONY AND RECOMMENDATIONS.

A. Mr. Parcell estimates Duke Energy Progress' Cost of Equity based on: (1) the Constant Growth DCF model; (2) the CAPM; and (3) the Comparable Earnings Model ("CEM"). Mr. Parcell excludes his CAPM results, which range from 6.30 percent to 6.60 percent, and sets his ROE range of 9.10 percent to 9.50 percent by reference to the midpoints of his DCF results and his CEM results.[29]

As to the Company's proposed capital structure and Cost of Debt, Mr. Parcell accepts the Company's proposed capital structure of 53.00 percent Common Equity and 47.00 percent Long-Term Debt, and the proposed Cost of Debt of 4.06 percent.[30]

Q. PLEASE SUMMARIZE THE KEY AREAS IN WHICH YOU DISAGREE WITH MR. PARCELL'S ANALYSES AND RECOMMENDATIONS.

A. The principal areas in which I disagree with Mr. Parcell's analyses and conclusions include: (1) the effect of current market conditions on Duke Energy Progress' Cost of Equity; (2) Duke Energy Progress' risk relative to the proxy group; (3) the composition of Mr. Parcell's proxy group, and the criteria by which he selected that group; (4) the growth rates used in our respective DCF analyses; (5) the application

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[29] *See* Direct Testimony of David C. Parcell, at 4.
[30] Direct Testimony of David C. Parcell, at 27.

of the CAPM; (6) Mr. Parcell's application of the CEM; and (7) the appropriateness of recovering flotation costs.

Capital Market Conditions

Q. PLEASE BRIEFLY SUMMARIZE THE FINANCIAL AND ECONOMIC CONDITIONS MR. PARCELL DISCUSSES IN HIS DIRECT TESTIMONY.

A. To evaluate financial and economic conditions over multiple business cycles, Mr. Parcell reviews stock prices, interest rates, and inflation since 1975. He points to the severity of the 2008-2009 financial crisis and the associated "flight to safety" (*i.e.*, deterioration of stock prices, decreases in Treasury yields, and increases in credit spreads) as the end of an approximately 35-year period of general prosperity and stability, noting that U.S. government and Federal Reserve implemented unprecedented actions to minimize the scope and effects of the recession. In Mr. Parcell's view, the crisis led to a reduction in actual and expected investment returns, and corresponding capital costs.[31]

Regarding the current business expansion cycle that started in July 2009, Mr. Parcell notes that stock prices have "reached and exceeded" the level seen prior to the 2008-2009 financial crisis, although utility bond interest rates are still below the levels prevailing prior to that dislocation.[32] Comparatively low levels of inflation (as measured by the Consumer Price Index), he asserts, are "reflective of

[31] Direct Testimony of David C. Parcell, at 11-12.
[32] *Ibid*., at 14-15.

lower capital costs."[33] Mr. Parcell suggests that this has caused "a decline in investor expectations of returns."[34]

Lastly, Mr. Parcell notes that "government and utility long-term lending rates remain near historically low levels" despite increased rates on U.S. Treasury and public utility securities.[35]

Q. WHAT IS YOUR RESPONSE TO MR. PARCELL ON THOSE POINTS?

A. First, Mr. Parcell's suggestion that there has been a reduction in equity returns since 2009 is incorrect. The arithmetic average annual total return on the S&P 500 has been 14.30 percent since the beginning of 2010 (15.65 percent since the beginning of 2009), which is above its 12.06 percent historical average return (from 1926 to 2017).[36] As shown in Mr. Parcell's Schedule 9, it is also clear that the S&P 500's earned return on equity also has recovered to pre-crisis levels.[37]

As to his review of interest rates, Mr. Parcell refers to page 2 of his Schedule 2, noting that although long-term interest rates increased in the beginning of 2018, and subsequently declined in recent months, they remain "near historically low levels."[38] At the end of 2018 (and through 2019), long-term Treasury yields were

33 *Ibid.*, at 12.
34 *Ibid.*, at 14.
35 *Ibid.*, at 13.
36 Source: Duff & Phelps, Inc., 2018 SBBI Yearbook, Appendix A-1.
37 2000-2007 average = 13.39 percent. 2010-2017 average = 13.69 percent.
38 Direct Testimony of David C. Parcell, at 13.

at their highest level since 2014.[39] The same is true of utility bond yields – at the end of 2018 and through 2019 they have been at their highest level since 2013.[40]

Although they have been volatile, the 30-day average 3.03 percent yield on 30-year Treasury securities,[41] is in line with, although slightly above, the five-year average of approximately 2.94 percent (2.97 percent median).[42] Nonetheless, consensus forecasts project the 30-year Treasury yield to reach 3.50 percent by June 2020.[43] In my view, the increase in long-term interest rates through 2018 and into 2019,[44] and the continuing expectations of rate increases, should be considered in determining the Company's Cost of Equity.

Duke Energy Progress' Relative Risk

Q. ON PAGES 18 THROUGH 24 OF HIS DIRECT TESTIMONY, MR. PARCELL MENTIONS DUKE ENERGY PROGRESS' REGULATORY MECHANISMS, ARGUING THEY SHOULD BE RECOGNIZED IN THE COMPANY'S AUTHORIZED ROE. WHAT IS YOUR RESPONSE TO MR. PARCELL ON THAT POINT?

A. Because the Cost of Equity is based on the principle of opportunity costs, its estimation necessarily is a comparative exercise. That is, if we are going to

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[39] Source: Federal Reserve H.15 Selected Interest Rates. Annual average 30-year and 20-year Treasury bond yields from 2010 to 2018. 2019 includes data through February 15, 2019.
[40] Exhibit DCP-2, Schedule 2, page 2 of 3.
[41] As of February 15, 2019.
[42] Source: Federal Reserve H.15 Selected Interest Rates.
[43] *See* Blue Chip Financial Forecast, Vol. 38, No. 2, February 1, 2019, at 2.
[44] *See, e.g.*, Exhibit DCP-2, Schedule 2, page 2 of 3.

consider the effect of rate mechanisms on the Company's Cost of Equity, we must consider whether its peers also have rate mechanisms in place. Although he recognizes the prevalence of such structures, Mr. Parcell reviews the Company's rate mechanisms in isolation, not considering whether its peers likewise have alternative rate structures in place. As shown on Rebuttal Exhibit No. RBH-7, all proxy companies have alternative rate mechanisms in place. On that basis alone, we cannot say the Company's structures reduce its risk relative to its peers', and its ROE should be limited or reduced.

Q. DOES MR. PARCELL ACKNOWLEDGE AS MUCH IN HIS DIRECT TESTIMONY?

A. Yes. At pages 21-22 of his testimony, Mr. Parcell acknowledges regulatory mechanisms are not new to the industry. Beyond that, Mr. Parcell offers no assessment of such structures among his proxy companies. Nor does Mr. Parcell explain why the Company's structures mitigate risks to its equity investors far more than the structures in place within his proxy group mitigate risks to their equity investors. That is, Mr. Parcell offers no specific reason why the Company's ROE should be lowered relative to its peers'.

Q. ARE THERE OTHER FUNDAMENTAL REASONS WHY MR. PARCELL'S SUGGESTION THAT THE COMPANY'S ROE SHOULD BE LIMITED, OR REDUCED, DUE TO ITS RATE MECHANISMS IS INCORRECT?

A. Yes. First, Mr. Parcell's argument appears to be that the Company's regulatory mechanisms necessarily are credit enhancing – that they materially improve the utility's financial integrity, thereby reducing its cost of capital. He fails to consider that regulatory mechanisms such as the Company's are more likely to be credit supportive – helping utilities maintain their credit profiles in the face of countervailing forces. That is, but for the rate structures, the utility's credit profile would come under pressure, likely increasing its cost of capital.

Second, the position that a reduction in volatility (whether of revenues, income, or cash flow) or the timing of cash flows necessarily requires a reduction in the Cost of Equity runs counter to Modern Portfolio Theory, which is the fundamental basis of the CAPM. Under Modern Portfolio Theory, risk is defined as the uncertainty, or variability, of returns. Modern Portfolio Theory was advanced by recognizing that total risk may be separated into two distinct components: non-diversifiable risk, which is the portion of risk that can be attributed to the market as a whole; and non-systematic (or diversifiable) risk, which is attributable to the idiosyncratic nature of the subject company, itself. As noted in my Direct Testimony, non-diversifiable risk is measured by the Beta coefficient within the CAPM structure.[45]

According to Modern Portfolio Theory (and the CAPM) an investor would not be indifferent to a reduction in expected ROE in return for a reduction in volatility of revenues, unless the reduction in volatility specifically relates to reduced non-diversifiable risk. That is, any reduction in the Cost of Equity depends critically on the type of risk that is reduced; if the risk assumed to be mitigated by the Company's rate structures is diversifiable, there would be no reduction in the Cost of Equity even if total risk (diversifiable plus non-diversifiable risk) has been reduced. If the rate structures mitigate increased systematic risk associated with the factors that drove the Company to implement them the first place, there likewise would be no effect on the Cost of Equity.

Although Mr. Parcell recognizes the importance of systematic risk,[46] he assumes, but does not demonstrate, that any risks mitigated by the rate structures are systematic,. Nor does he demonstrate that systematic risk had not increased before the structures were implemented. In the context of the CAPM, therefore, Mr. Parcell has not shown that the Company's rate structures necessarily reduce its Cost of Equity.

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45 *See* Direct Testimony of Robert B. Hevert, at 35.
46 *See* Direct Testimony of David C. Parcell, at 36.

Q. MR. PARCELL ALSO POINTS TO TWO REPORTS BY MOODY'S, THE FIRST PUBLISHED IN 2010 AND THE SECOND PUBLISHED IN 2015, TO SUPPORT HIS POSITION THAT THE COMPANY'S RATE STRUCTURES SERVE TO REDUCE ITS COST OF EQUITY.[47] WHAT IS YOUR RESPONSE TO MR. PARCELL ON THAT POINT?

A. First, given the increasing prevalence of rate structures, it is not clear why a report from 2010 regarding rate structures is relevant in the current market. As to the 2015 report, Mr. Parcell points to it and concludes the Company's rate mechanisms put downward pressure on its Cost of Equity. As noted below, debt and equity investors have different objectives and face different risks. From that perspective alone, I do not believe we should draw the inferences Mr. Parcell has drawn from those rating agency reports.

The March 2015 Moody's article makes clear utilities' cash flow had benefited from increased deferred taxes, which themselves were due to bonus depreciation. In that report, Moody's noted the rise in deferred taxes eventually would reverse. [48] In January 2018, Moody's spoke to the effect of that reversal on utility credit profiles in the context of tax reform:

> Tax reform is credit negative for US regulated utilities because the lower 21% statutory tax rate reduces cash collected from customers, while the loss of bonus depreciation reduces tax deferrals, all else

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47 *Ibid*, at 22-23.

49 Moody's Investors Service, *Lower Authorized Returns Will Not Hurt Near-Term Credit Profiles,* March 10, 2015, at 4.

> being equal. Moody's calculates that the recent changes in tax laws will dilute a utility's ratio of cash flow before changes in working capital to debt by approximately 150 - 250 basis points on average, depending to some degree on the size of the company's capital expenditure programs. From a leverage perspective, Moody's estimates that debt to total capitalization ratios will increase, based on the lower value of deferred tax liabilities.[49]

In June 2018, Moody's changed its outlook on the U.S. regulated sector to "negative" from "stable". Moody's explained that its change in outlook "…primarily reflects a degradation in key financial credit ratios, specifically the ratio of cash flow from operations to debt, funds from operations ("FFO") to debt and retained cash flow to debt, as well as certain book leverage ratios."[50] The sector's outlook could remain "negative" if cash flow-based metrics continue to decline, or if there emerge signs of a more "contentious" regulatory environment (which, Moody's notes, is not fully reflected in lower authorized returns). Mr. Parcell's reference to a 2015 article does not consider Moody's more recent position.

Lastly, the 2015 Moody's article observed that although interest rates then were relatively low, they "will go up, eventually", which "could spell trouble for utilities." Moody's concluded, "[f]or now, utilities can enjoy their (historically)

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[49] Moody's Investors' Service, *Rating Action: Moody's changes outlooks on 25 US regulated utilities primarily impacted by tax reform*, January 19, 2018.

[50] Moody's Investors Service, *Announcement: Moody's changes the US regulated utility sector outlook to negative from stable,* June 18, 2018.

high equity valuations in terms of dividend yield and price-earnings ratios."[51] Since then the Federal Reserve increased the Federal Funds target rate by 225 basis points to a current range of 2.25 percent – 2.50 percent, and has begun to unwind its balance sheet.

Q. MR. PARCELL ARGUES THE COMPANY'S REGULATORY ASSETS FOR DEFERRED COSTS ALSO REDUCE ITS RISK.[52] DO YOU AGREE WITH MR. PARCELL ON THAT POINT?

A. No, I do not. Mr. Parcell argues the Company's current and proposed regulatory assets reduce its risk because "the risk of fully recovering certain expenses is reduced or eliminated."[53] At the same time (and as discussed in Section VI below), ORS Witness Mr. Payne recommends the Commission disallow the return on certain deferred operating costs.[54] That is, on the one hand, ORS suggests the Company should be authorized a lower ROE because its regulatory assets reduce its risk but on the other, recommends the Commission not allow the return on certain of those regulatory assets.

Mr. Payne recommends each deferral balance be separated into two categories: operating- and capital-related,[55] and that "the deferred cost of capital

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51 Moody's Investors Service, *Lower Authorized Returns Will Not Hurt Near-Term Credit Profiles*, March 10, 2015., at 5.
52 Direct Testimony of David C. Parcell, at 19-21.
53 *Ibid*., at 21.
54 Direct Testimony of Zachary J. Payne at 5.
55 *See* Direct Testimony of Zachary J. Payne at 4.

portion of the deferral balance [be allowed] in rate base" and "exclude the deferred [operating] expense from rate base".[56] Mr. Parcell's recommendation to further adjust the company's ROE downward to account for the Company's Commission-approved deferral accounts unnecessarily penalizes the Company and compounds the financial effect of ORS's recommendations on the Company.

As discussed in more detail in Section VI, the operating- and capital-related costs for which Company requests deferrals reflect cash outlays that required financing. A carrying charge offsets those financing costs, and makes the Company whole on a present value basis. A downward adjustment to the Company's ROE would further erode its income, and restrain its ability to earn its investor-required Cost of Equity.

Q. MR. PARCELL SUGGESTS THE ADDITIONAL FACTORS YOU IDENTIFY IN YOUR DIRECT TESTIMONY ALREADY ARE REFLECTED IN THE COMPANY'S CREDIT RATINGS.[57] WHAT IS YOUR RESPONSE TO MR. PARCELL ON THAT POINT?

A. Although I agree credit ratings generally are directionally related to the Cost of Equity,[58] I do not agree that one is a direct measure of the other. Debt and equity are entirely different securities with different risk/return characteristics, different

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56 *Ibid.*, at 12.

57 *See* Direct Testimony of David C. Parcell, at 57-58.

58 As noted by Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992, at 68, "equity risk premia… increased with the increases in the spread between corporate and government bond yields".

lives, and different investors. Debt investors have a contractual, priority claim on cash flows not available to equity investors and as such, equity investors bear the residual risk of ownership. Because the life of debt is finite, debt investors' exposure to business and financial risk likewise is finite. Equity, on the other hand is perpetual and as such, equity investors are exposed to residual risk in perpetuity. Because debt and equity are distinct securities with different risk and return profiles, debt and equity investors themselves have different risk and return requirements. As such, any inferences drawn from credit ratings for the Company's Cost of Equity should be drawn with caution.

A visible measure of the difference in risks to which debt and equity investors are exposed is the difference in their respective Beta coefficients. Although I disagree with his approach and conclusions, Mr. Parcell calculates average Beta coefficients of 0.54 and 0.60 for his and my proxy group, respectively.[59] Duff & Phelps notes that as of December 2017, Beta coefficients for A-rated debt was negative 0.04.[60] That is, the Beta coefficients of A-rated debt are well below those of the equity Beta coefficients assumed by Mr. Parcell, indicating a far different risk profile. In fact, a debt Beta coefficient in the range of 0.73 is associated with Caa rated debt, well below investment grade.[61] Those

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59 Exhibit DCP-2, Schedule 10.

60 Duff & Phelps 2018 Valuation Handbook, John Wiley & Sons, Inc., 2018, at Exhibit 5.7 Chapter 5, page 18.

61 *Ibid*.

substantial differences in Beta coefficients are clear indications that the risks assumed by debt investors are far different than those assumed by equity investors.

Proxy Group

Q. PLEASE SUMMARIZE THE PROXY GROUPS USED BY MR. PARCELL.

A. Mr. Parcell uses two proxy groups, including (1) the proxy group used in my Direct Testimony; and (2) a proxy group of nine companies developed by applying the following criteria to Value Line's universe of electric and combination electric/gas utilities:[62]

- Market capitalization of $20 billion or greater;
- Common equity ratio of 40.00 percent or greater;
- Value Line Safety Rating of 1 or 2;
- S&P and/or Moody's bond ratings of BBB to A;
- Currently pays dividends; and
- Not currently involved in major merger or acquisition.

Q. DO YOU AGREE WITH MR. PARCELL'S SCREENING CRITERIA?

A. Not entirely. Although we have certain criteria in common (for example, we both exclude companies that are party to a significant corporate transaction or that do not pay dividends), I do not believe Mr. Parcell's criteria render a group of companies sufficiently comparable to Duke Energy Progress.

[62] *See* Direct Testimony of David C. Parcell, at 27-28.

Q. WHY IS IT APPROPRIATE TO EXCLUDE COMPANIES SUCH AS CONSOLIDATED EDISON AND EVERSOURCE ENERGY THAT ARE NOT VERTICALLY INTEGRATED ELECTRIC UTILITIES?

A. As discussed in my Direct Testimony,[63] it is important to select companies with risk profiles comparable to the subject company. Companies that own and operate electric generating plants face potential capital investment needs, and additional operating risks. As such, distribution-only electric utilities do not face the same set of challenges as do vertically integrated electric utilities.

Q. DO YOU AGREE WITH MR. PARCELL'S USE OF DUKE ENERGY CORPORATION AS A PROXY FOR DUKE ENERGY PROGRESS?

A. No, I do not. As discussed in my Direct Testimony,[64] to avoid the circular logic that otherwise would occur, it is appropriate to exclude the subject company, or its parent holding company, from the proxy group.

Q. DO YOU AGREE WITH MR. PARCELL'S THAT AVANGRID SHOULD BE EXCLUDED FROM YOUR PROXY GROUP?

A. No, I do not. First, Avangrid meets my all my screening criteria. It also meets all but one of Mr. Parcell's screening criteria (the exception being his criterion requiring a market capitalization greater than $20 billion).[65] Further, Avangrid's

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63 *See* Direct Testimony of Robert B. Hevert, at 15.

64 *Ibid.*, at 16.

65 *See* Direct Testimony of David C. Parcell, at 28. I note Mr. Parcell's screening criteria does not include a criterion based on a company's foreign or domestic ownership of outstanding shares.

risk measures as reported by Value Line and credit ratings are comparable to the companies in my and Mr. Parcell's proxy groups.[66]

Avangrid is a publicly traded company[67] with two business segments: (1) Avangrid Networks, which represents the U.S. regulated electric and natural gas utility operations that serve 3.20 million customers in New York and New England; and (2) Avangrid Renewables, which owns and operates renewable electricity capacity across 22 states.[68] The regulated utility operations of Avangrid Networks account for 83.00 percent of Avangrid's 2017 operating revenues, and more than 100.00 percent of its net income.[69] Consequently, Avangrid's regulated operations represent a vast majority of total company operations. Although its ultimate parent Iberdrola, S.A. ("Iberdrola"), owns approximately 81.60 percent of the outstanding common stock, Avangrid's stock price reflects the risks associated with Avangrid's operations, not Iberdrola's. For these reasons, I believe it is reasonable to include Avangrid in the proxy group.

66 *See* Direct Testimony of David C. Parcell, Exhibit DCP-2, Schedule 7, and Schedule 13, page 1.

67 Avangrid is the merged company of Iberdrola USA (formerly Energy East Corporation) and UIL Holdings Corporation. Energy East Corporation and UIL were publicly traded companies on the New York Stock Exchange. *See* Avangrid, Inc. SEC Form 10-K for the Year Ended December 31, 2017, at 6, 8.

68 Avangrid, Inc. SEC Form 10-K for the Year Ended December 31, 2017, at 6.

69 Avangrid, Inc. SEC Form 10-K for the Year Ended December 31, 2017, at 62.

DCF Growth Rates

Q. PLEASE SUMMARIZE THE GROWTH RATES THAT MR. PARCELL RELIES ON IN HIS CONSTANT GROWTH DCF ANALYSIS.

A. Mr. Parcell considers five measures of growth: (1) historical, five-year average earnings Retention Growth rates from Value Line for 2014-2018; (2) five-year average historical growth in Earnings Per Share ("EPS"), Dividends Per Share ("DPS"), and Book Value Per Share ("BVPS") from Value Line; (3) projected earnings Retention Growth for 2019, and 2021-2023 from Value Line; (4) projected EPS, DPS, and BVPS growth rates from Value Line for years 2015-2017 to 2021-2023; and (5) five-year projections of EPS growth as reported by First Call.[70]

Q. PLEASE SUMMARIZE THE DIFFERENCES BETWEEN YOU AND MR. PARCELL REGARDING THE GROWTH RATES IN YOUR RESPECTIVE CONSTANT GROWTH DCF ANALYSES.

A. As discussed in my Direct Testimony, analysts' earnings projections are the relevant measure of growth.[71] Mr. Parcell's analysis, on the other hand, includes both historical and projected growth in DPS, BVPS, and EPS, as well as historical and projected measures of Retention Growth. For the reasons discussed below, I disagree with Mr. Parcell's use of historical data, and with his use of projected DPS, BVPS, and Retention Growth rates.

70 *See* Direct Testimony of David C. Parcell, at 31-32, and Schedule 8.

71 *See* Direct Testimony of Robert B. Hevert, at 21-23.

Q. DO YOU AGREE WITH MR. PARCELL THAT HISTORICAL GROWTH RATES ARE APPROPRIATE MEASURES OF EXPECTED GROWTH FOR THE CONSTANT GROWTH DCF MODEL?

A. No, I do not. The growth component of the Constant Growth DCF model is a forward-looking measure. To the extent historical growth influences expectations of future growth, it already will be reflected in analysts' consensus earnings growth estimates. Carleton and Vander Weide found "overwhelming evidence that consensus analysts' forecast of future growth is superior to historically oriented growth measures in predicting the firm's stock price."[72] Consequently, I do not believe historical growth rates are appropriate for the Constant Growth DCF model.

Q. WHY DO YOU DISAGREE WITH MR. PARCELL'S POSITION THAT DIVIDEND OR BOOK VALUE GROWTH RATES ARE APPROPRIATE INPUTS TO THE CONSTANT GROWTH DCF MODEL?

A. It is important to realize that earnings growth enables both dividend and book value growth. Under the strict assumptions of the Constant Growth DCF model, earnings, dividends, book value, and stock prices all grow at the same, constant rate. As Rebuttal Exhibit No. RBH-8 demonstrates, under those assumptions the assumed growth rate equals the rate of capital appreciation (*i.e.*, the stock price growth rate). Because investors tend to value common equity on the basis of P/E ratios, the Cost

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[72] Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

of Equity is a function of the expected growth in earnings, not dividends or book value.

In addition, Value Line is the only service relied on by Mr. Parcell that provides either DPS or BVPS growth projections. The fact that services such as Zacks and First Call provide earnings, but not dividend or book value growth estimates indicates that they see little investor demand for such data. As Dr. Roger Morin notes:

> Casual inspection of the Zacks Investment Research, First Call Thompson, and Multex Web sites reveals that earnings per share forecasts dominate the information provided. There are few, if any, dividend growth forecasts. Only Value Line provides comprehensive long-term dividend growth forecasts. The wide availability of earnings forecast is not surprising. There is an abundance of evidence attesting to the importance of earnings in assessing investors' expectations. The sheer volume of earnings forecasts available from the investment community relative to the scarcity of dividend forecasts attests to their importance. The fact that these investment information providers focus on growth in earnings rather than growth in dividend indicates that the investment community regards earnings growth as a superior indicator of future long term growth.[73]

Moreover, Value Line estimates are available only via a subscription service and are attributable to a single analyst. Services such as Zacks and First Call, on the other hand, provide consensus growth estimates of multiple analysts and as such, are less likely to be skewed in one direction or another by an individual analyst.

[73] Roger A. Morin, PhD, New Regulatory Finance, (Public Utilities Reports, Inc., 2006), at 302-303.

Q. IS THE USE OF ANALYSTS' EARNINGS GROWTH PROJECTIONS IN THE DCF MODEL SUPPORTED BY FINANCIAL LITERATURE?

A. Yes, it is. As noted in my Direct Testimony,[74] peer-reviewed, published articles support the use of analysts' earnings growth projections in the DCF model. Again, earnings growth, not dividend growth, is the appropriate estimate in the Constant Growth DCF model.

Q. HAVE YOU UNDERTAKEN ANY ANALYSES TO DETERMINE WHICH MEASURES OF GROWTH ARE STATISTICALLY RELATED TO THE PROXY COMPANIES' STOCK VALUATION LEVELS?

A. Yes, I have. My analysis is based on the methodological approach used by Professors Carleton and Vander Weide, who compared the predictive capability of historical growth estimates and analysts' forecasts on the valuation levels of sixty-five utility companies.[75] I structured the analysis to understand whether projected earnings, dividend, book value, or retention growth rates best explain utility stock valuations. More specifically, my analysis examined the statistical relationship between the P/E ratios of companies found in the Value Line Electric Universe, and the projected EPS, DPS, BVPS, and "B x R" Retention Growth rates reported by Value Line. To determine which, if any, of those growth rates are statistically related to utility stock valuations, I performed a series of regression analyses in

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[74] *See* Direct Testimony of Robert B. Hevert, at 22-23.

[75] Vander Weide and Carleton, *Investor Growth Expectations: Analysts vs. History*, The Journal of Portfolio Management (Spring 1988).

which the projected growth rates were explanatory variables and the P/E ratio was the dependent variable. The results of those analyses are presented in Rebuttal Exhibit No. RBH-9.

In that analysis, I performed four separate regressions with the P/E as the dependent variable, and projected EPS, DPS, BVPS, and Retention Growth estimates, respectively, as the independent variable. I also performed a single regression with the P/E as the dependent variable and historical and projected EPS, DPS, BVPS, and projected Retention Growth rates as the independent variables. I then reviewed the T- and F-Statistics to determine whether the variables and equations were statistically significant.[76]

Q. WHAT DID THOSE ANALYSES REVEAL?

A. As shown in Rebuttal Exhibit No. RBH-9, the only growth rate that was statistically significant and positively related to the P/E ratio was projected Earnings Per Share.[77] Because EPS growth is the only growth rate that is both statistically and positively related to utility valuation, earnings is the proper measure of growth in the Constant Growth DCF Model.

[76] In general, a T-Statistic of 2.00 or greater indicates that the variable is likely to be different than zero, or "statistically significant." The F-Statistic is used to determine whether the model as a whole has statistically significant predictive capability.

[77] For example, while historical dividend growth was statistically significant at the 95.00 percent level, the coefficient was negative, indicating an inverse relationship such that an *increase* in the historical dividend growth rate was related to a *decrease* in the P/E ratio.

Q. PLEASE SUMMARIZE YOUR CONCERNS WITH MR. PARCELL'S USE OF THE RETENTION GROWTH MODEL.

A. I have several concerns with Mr. Parcell's use of the Retention Growth model in this proceeding. First, as discussed below, the model's underlying premise is that future earnings will increase as the retention ratio increases. That is, if future growth is modeled as "B x R" (where B is the retention ratio, and R is the earned return on book equity), growth will increase as B increases. There are several reasons, however, why that may not be the case. Management decisions to conserve cash for capital investments, to manage the dividend payout to minimize future dividend reductions, or to signal future earnings prospects can and do influence dividend payout (and therefore earnings retention) decisions in the near-term. Consequently, it is appropriate to determine whether the data relied on by Mr. Parcell supports the assumption that higher earnings retention ratios necessarily are associated with higher future earnings growth rates.

Q. DID YOU PERFORM ANY ANALYSES TO TEST THE RELATIONSHIP BETWEEN RETENTION RATIOS AND FUTURE GROWTH RATES?

A. Yes, I did. Using EPS and DPS data from Value Line (the source of the data Mr. Parcell used to calculate his earnings Retention Growth estimate), I calculated the historical dividend payout ratio, retention ratio, and subsequent five-year average earnings growth rate for each of our proxy companies with a consistent history of dividend payments. I then performed a regression analysis in which the dependent variable was the five-year earnings growth rate, and the explanatory variable was the earnings retention ratio. The purpose of that analysis was to determine whether Mr. Parcell's data empirically supports the assumption that higher retention ratios necessarily produce higher earnings growth rates.

Q. WHAT DID THAT ANALYSIS REVEAL?

A. As shown in Table 2 below (*see* also Rebuttal Exhibit No. RBH-10), there was a statistically significant negative relationship between the five-year average earnings growth rate and the earnings retention ratio. That is, based on Mr. Parcell's data source, earnings growth actually decreased as the retention ratio increased. Those findings clearly call into question Mr. Parcell's reliance on his "Retention Growth" estimate.

Table 2: Regression Results - Retention Ratio / Earnings Growth[78]

	Coefficient	Standard Error	t-Statistic
Intercept	0.169	0.016	10.402
Retention Ratio	-0.236	0.026	-9.193

Q. ARE YOU AWARE OF INDEPENDENT RESEARCH THAT SUPPORTS YOUR FINDINGS?

A. Yes, I am. In 2006, for example, two articles in Financial Analysts Journal addressed the theory that high dividend payouts (*i.e.*, low retention ratios) are associated with low future earnings growth.[79] Both articles cite a 2003 study by Arnott and Asness,[80] who found that over the course of 130 years of data, future earnings growth is associated with high, rather than low, payout ratios.[81] In essence, the findings of all three studies are consistent with my findings regarding the relationship between retention ratios and future earnings growth for my and Mr. Parcell's proxy companies: there is a negative, not a positive relationship between the two. In light of those articles, it appears my findings are reasonable. Given the

78 *See also* Rebuttal Exhibit No. RBH-10.

79 *See* Ping Zhou, William Ruland, *Dividend Payout and Future Earnings Growth*, Financial Analysts Journal, Vol. 62, No. 3, 2006. *See also*, Owain ap Gwilym, James Seaton, Karina Suddason, Stephen Thomas, *International Evidence on the Payout Ratio, Earnings, Dividends and Returns*, Financial Analysts Journal, Vol. 62, No. 1, 2006.

80 *See* Robert Arnott, Clifford Asness, *Surprise: Higher Dividends = Higher Earnings Growth*, Financial Analysts Journal, Vol. 59, No. 1, January/February 2003.

81 Because the payout ratio is the inverse of the retention ratio, the authors found that future earnings growth is negatively related to the retention ratio.

strong statistical results of my analyses, and the corroborating research discussed above, I continue to believe Mr. Parcell's substantial reliance on the "B x R" approach is inappropriate.

Q. ARE THERE OTHER CONCERNS WITH THE RETENTION GROWTH ESTIMATE?

A. Yes. Because the Retention Growth model requires an estimate of the earned Return on Common Equity ("ROCE"), it includes an element of circularity. Mr. Parcell's historical earnings Retention Growth estimate pre-supposes the historical earned ROE is a reasonable estimate of future ROE, and his forward-looking earnings Retention Growth estimate effectively pre-supposes Value Line's projected ROCE for the proxy companies.[82] Regarding the forward-looking Retention Growth estimate, Mr. Parcell's calculation relies on a single source of data (Value Line), whose estimates are produced by a single analyst, which increases the risk of idiosyncratic error that may bias the end results.

Lastly, relying on Retention Growth suggests the relationship between two Value Line data points is more robust than the fundamental research performed by utility analysts. Transcripts of earnings conference calls demonstrate that analysts focus on issues relating to operating expenses, required capital investments, rate

82 As shown on Exhibit DCP-2, Schedule 11, the average and median projected ROCE from Value Line for my and Mr. Parcell's proxy groups range from 10.00 percent to 11.00 percent, well above Mr. Parcell's 9.30 percent ROE recommendation and consistent with my recommended range.

relief, and other factors that affect the ROCE and, therefore, the Retention Growth estimate.[83] Quite simply, the level of fundamental research performed by analysts on issues that directly bear on long-term growth far exceed Mr. Parcell's calculation of Retention Growth estimates.

Q. ARE VALUE LINE'S PROJECTIONS FOR THE PROXY COMPANIES' GROWTH IN EARNINGS PER SHARE CONSISTENT WITH THE RETENTION GROWTH ESTIMATE?

A. No, they are not. As shown in Rebuttal Exhibit No. RBH-11, I calculated the Retention Growth rate using Value Line's projected financial metrics for each company in our combined proxy group for the years 2018, and 2021-2023. I then compared those estimates to Value Line's expected earnings growth for each company. As shown in Rebuttal Exhibit No. RBH-11, Value Line frequently expects actual earnings growth to exceed the growth rate indicated by the Retention Growth formula. Consequently, the assumption that the Retention Growth estimate accurately reflects future growth may be too limiting.

Q. ASIDE FROM THOSE CONCERNS, DO YOU AGREE WITH MR. PARCELL'S SPECIFICATION OF THE RETENTION GROWTH RATE?

A. No, I do not. The full form of the model assumes growth is a function of its expected earnings, and the extent to which it retains earnings to invest in the

[83] *See, e.g.*, American Electric Power Co., Inc., Q3 2018 Earnings Call Transcript, October 25, 2018. American Electric Power Co., Inc., Q4 2018 Earnings Call Transcript, January 24, 2019.

enterprise. The form of the model on which Mr. Parcell relies is its simplest form, which defines growth solely as a function of internally generated funds.

Although I do not believe it is appropriate to use the Retention Growth rate to estimate the Cost of Equity in this proceeding, if Mr. Parcell is going to consider a form of Retention Growth, he should use the "BR + SV" form of the model, which reflects growth both from internally generated funds (*i.e.*, the "BR" term) and from issuances of equity (*i.e.*, the "SV" term). As noted above, the first term is the product of the retention ratio (*i.e.*, "B", or the portion of net income not paid in dividends) and the expected ROE (*i.e.*, "R"), which represents the portion of net income that is "plowed back" into the company as a means of funding growth. The "SV" term is represented as:

$$\left(\frac{m}{b} - 1\right) x \text{ Common shares growth rate}$$

where

$\left(\frac{m}{b}\right)$ equals the M/B ratio. In that form, the "SV" term reflects an element of growth as the product of (1) the growth in shares outstanding, and (2) that portion of the market-to-book ratio that exceeds unity.

Q. MR. PARCELL CITES A 2010 MCKINSEY REPORT AND CONCLUDES INVESTORS SHOULD BE "HESITANT TO RELY EXCLUSIVELY ON ANALYSTS' FORECASTS IN MAKING INVESTMENT DECISIONS."[84] DOES THAT REPORT CALL IN TO QUESTION THE EARNINGS GROWTH RATES USED IN YOUR DCF ANALYSIS?

A. No, it does not. First, the McKinsey report was not specific to the utility industry and therefore includes data that may not be relevant to the Company. For example, the report references average analyst growth estimates "ranging from 10 to 12 percent a year", which is approximately twice the 5.79 percent average earnings growth rate estimate used in my DCF analysis.[85]

In addition, the McKinsey report observes "… long-term earnings growth for the market as a whole is unlikely to differ significantly from growth in GDP, as prior McKinsey research has shown." In a footnote to that sentence, McKinsey further states that "[r]eal GDP has averaged 3 to 4 percent over past (*sic*) seven or eight decades, which would indeed be consistent with nominal growth of 5 to 7 percent given current inflation of 2 to 3 percent."[86] The average growth rate used in my DCF analysis is therefore on the low-end of the range of long-term earnings growth estimates supported by the McKinsey report.

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84 *See* Testimony of David C. Parcell, at 51.
85 *See* Exhibit RBH-1.
86 *Equity Analysts: Still too bullish*, McKinsey & Company, McKinsey on Finance, Number 35, Spring 2010.

Q. MR. PARCELL ALSO CITES A PUBLICATION FROM THE SECURITIES AND EXCHANGE COMMISSION TITLED "ANALYZING ANALYST RECOMMENDATIONS" AS SUPPORT FOR HIS CONCLUSION THAT INVESTORS SHOULD NOT RELY EXCLUSIVELY ON ANALYSTS' FORECASTS. PLEASE RESPOND.

A. As a preliminary matter, the SEC "Investor Publication" discusses analysts' buy, sell, and hold recommendations, rather than their earnings growth estimates.[87] The publication explains the role of analysts and reviews a number of rule changes and disclosure requirements that were put in place starting in 2002 to mitigate potential conflicts of interest.

As a practical matter, it is important to consider the October 2003 Global Research Analyst Settlement that required financial institutions to insulate investment banking from analysis, prohibited analysts from participating in "road shows," and required the settling financial institutions to fund independent third-party research.[88] I have reviewed the Letters of Acceptance, Waiver and Consent signed by financial institutions that were party to the Global Settlement, and found no reference to misconduct by analysts following the utility sector.

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[87] *See* https://www.sec.gov/investor/pubs/analysts.htm. Mr. Parcell refers to the document as a 2010 "Investor Alert". *See* Direct Testimony of David C. Parcell, at 51-52.

[88] The 2002 Global Financial Settlement resolved an investigation by the U.S. Securities and Exchange Commission and the New York Attorney General's Office of a number of investment banks related to concerns about conflicts of interest that might influence the independence of investment research provided by equity analysts.

In addition, pursuant to Regulation AC, which became effective in April 2003, analysts must certify that "…the views expressed in the report accurately reflect his or her personal views, and disclose whether or not the analyst received compensation or other payments in connection with his or her specific recommendations or views."[89] I further understand industry practice is to avoid conflicts of interest by ensuring that compensation is not directly or indirectly linked to the opinions contained in those reports. Mr. Parcell has not explained why any of the analysts covering our respective proxy companies would bias their projections in light of those certification requirements.

Lastly, although the SEC publication does not address earnings growth estimates, it notes that analysts "exert considerable influence in today's marketplace" and their recommendations "can influence the price of a company's stock – especially when the recommendations are widely disseminated." The SEC's statement is consistent with the research and analysis discussed above, which indicate that stock price levels are strongly associated with analyst earnings growth estimates, and supports the conclusion that investors' do rely on analysts' projections.

[89] Securities and Exchange Commission, 17 CFR PART 242 [Release Nos. 33-8193; 34-47384; File No. S7-30-02], RIN 3235-AI60 Regulation Analyst Certification.

Q. THE SEC PUBLICATION CITED BY MR. PARCELL SUGGESTS INVESTORS REVIEW COMPANY PROVIDED DATA BEFORE MAKING AN INVESTMENT DECISION. HAVE YOU REVIEWED ANALYST EARNINGS GROWTH ESTIMATES IN RELATION TO EARNINGS GROWTH GUIDANCE?

A. Yes. I reviewed quarterly earnings presentations for several companies in my Updated Proxy Group, and found the analysts' growth rate projections were consistent with the long-term growth rate ranges provided by the companies' management teams (*see* Table 3, below).

Table 3: Analysts' Earnings Growth Projections Relative to Management Presentations[90]

Company	Ticker	Zacks Earnings Growth	Yahoo Earnings Growth	Value Line Earnings Growth	Investor Presentation Earnings Growth
Alliant Energy	LNT	6.00%	7.25%	6.50%	5.00 – 7.00%
Ameren Corp.	AEE	6.80%	7.70%	7.50%	6.00 – 8.00%
CMS Energy Corp.	CMS	6.40%	7.09%	7.00%	6.00 – 8.00%
OGE Energy Corp	OGE	5.20%	NA	6.00%	4.00 – 6.00%

I therefore continue to find the earnings projections included in my analyses are appropriate estimates of growth for the DCF model.

90 Source: Zacks, Yahoo Finance, Value Line, and individual company earnings presentations and investor presentations.

Q. MR. PARCELL CRITICIZES THE 5.46 PERCENT GDP GROWTH RATE USED IN YOUR MULTI-STAGE DCF ANALYSIS AS EXCESSIVE. IS HIS CRITICISM VALID?

A. No, it is not. The use of expected long-term GDP growth in the terminal period of DCF analysis is consistent with practice and financial literature. The 5.46 percent estimate of nominal GDP growth used in my Multi-Stage model is based on the combination of historical real growth in GDP from 1929-2017 (3.22 percent) and projected inflation (2.17 percent). As noted above, the McKinsey report cited by Mr. Parcell uses a similar approach to estimating GDP growth and determines a nominal growth rate range of approximately 5.00 percent to 7.00 percent (using real growth of 3.00 percent to 4.00 percent, and inflation of 2.00 to 3.00 percent). Morningstar also describes an approach for calculating the long-term growth estimate that is similar to that which is included in my model, resulting in a 5.48 percent GDP growth estimate.[91] As with my approach, Morningstar's method combines the historical average real GDP growth rate with a measure of inflation calculated using the TIPS spread.[92]

As a practical matter, the 5.46 percent GDP growth estimate is similar to the average earnings growth projections for the proxy group companies; it is also

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91 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 50-52.

92 Morningstar uses the following formula: Expected Nominal GDP = Expected Inflation Rate + Historical Real GDP Growth, or 5.48 percent = 2.26 percent + 3.22 percent.

well below the long-term average GDP growth rate of 6.12 percent.[93] Therefore, there is no reason to be concerned the growth estimate is "excessive".

Q. WHAT IS YOUR RESPONSE TO MR. PARCELL'S REFERENCE TO GDP FORECASTS PROVIDED BY THE ENERGY INFORMATION ADMINISTRATION ("EIA") AND SOCIAL SECURITY ADMINISTRATION ("SSA")?

A. As discussed in my Direct Testimony, the Multi-Stage DCF model enables the analyst to model growth in three stages, rather than a single growth rate in perpetuity (as the Constant Growth DCF model assumes).[94] The terminal, or third stage growth rate, represents investors' expectations for long-term (that is, perpetual) growth beginning in the third stage. Because the model assumes five-year periods for the first and second stage, the terminal stage (and, therefore, the terminal growth rate) begins in the eleventh year. The EIA forecast covers only fifteen years of a perpetual period and is simply not a long enough forecast to be used for the perpetual growth estimate.

As to the Social Security Administration, its Annual OASDI Report includes historical real GDP growth as well as projected growth rates under its "Intermediate", "Low Cost", and "High Cost" scenarios. The Report includes the same historical and projected time series for inflation (as measured by the

[93] Geometric average 1929 through 2017. Source: Bureau of Economic Analysis.
[94] *See* Direct Testimony of Robert B. Hevert, at 28.

Consumer Price Index). Although Mr. Parcell reports a long-term nominal GDP growth rate of 4.32 percent, that estimate relates to the "Intermediate" case. The "Low Cost" case includes estimates in the range of 5.60 percent to 5.90 percent.[95] The 5.46 percent growth rate included in my Direct Testimony (updated to 5.32 percent in Rebuttal Exhibit No. RBH-2) is below that range.

Q. PLEASE SUMMARIZE YOUR CONCERNS WITH THE CONSTANT GROWTH DCF MODEL AND MR. PARCELL'S RELIANCE ON THAT METHOD.

A. As noted in my Direct Testimony,[96] the Constant Growth DCF model requires several assumptions, including:

- Earnings, book value, and dividends all grow at the same, constant rate in perpetuity;
- The dividend payout ratio remains constant in perpetuity;
- The Price to Earnings ("P/E") ratio remains constant in perpetuity;
- The discount rate is greater than the expected growth rate; and
- The estimated Cost of Equity remains constant in perpetuity.

Under those strict assumptions, dividends, earnings, book value, and the stock price all grow at the same, constant rate in perpetuity. A consequence of the

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95 The 2018 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, June 5, 2018, Tables V.B.1, and V.B.2. Using projected real GDP and inflation (alternately GPI and CPI) for 2027 forward.

96 *See* Direct Testimony of Robert B. Hevert, at 19-20.

model's assumptions is that the holding period has no effect on the ROE estimate. That is, because all assumptions are held constant in perpetuity, the market price at any point in the future is based on assumptions established in the present. Because the future price (sometimes referred to as the "terminal price") is based on those constant assumptions, it does not matter whether the stock is held for five, ten, or 20 years, or any other holding period.[97]

That is, the model effectively assumes the market conditions in place when the stock is bought will remain in place forever. The DCF approach also assumes investors' stock purchase decisions are driven solely by net present value analyses (*see* Equations [1] and [2], at page 19 of my Direct Testimony). Consequently, the DCF model will not produce reliable estimates of the market-required ROE if the market price of a stock diverges from investors' estimate of its intrinsic value (*i.e.*, the calculated present value), which as noted earlier can and do occur when, for example, investors take short-term trading positions to hedge risk, to speculate, or as a temporary position to increase current income.

Application of the Capital Asset Pricing Model

Q. PLEASE SUMMARIZE MR. PARCELL'S CAPM ANALYSIS.

A. Mr. Parcell's CAPM analyses rely on the three-month average yield on 20-year Treasury securities from November 2018 through January 2019 (as the measure of the risk-free rate), Value Line Beta coefficients, and three estimates of the Market

[97] *See* Rebuttal Exhibit No. RBH-8.

Risk Premium ("MRP") including: (1) the average difference between the earned equity return on the S&P 500 less the 20-year Treasury yield from 1978 to 2017; (2) the arithmetic average difference between the total return on the S&P 500 and the total return on long-term government bonds (20-year Treasury securities based on data from Duff & Phelps); and (3) the geometric average difference between the total return on the S&P 500 and the total return on long-term government bonds, also based on data from Duff & Phelps. Mr. Parcell concludes that the Cost of Equity for Duke Energy Progress, based on his CAPM results, is between 6.30 percent and 6.60 percent.[98]

Q. DO YOU AGREE WITH MR. PARCELL'S APPLICATION OF THE CAPM?

A. No, I do not. In particular, I disagree with Mr. Parcell's assumption regarding the risk-free rate component of the model and his estimated MRP.

Q. WHY IS THE 30-YEAR TREASURY YIELD THE MOST APPROPRIATE MEASURE OF THE RISK-FREE RATE COMPONENT OF THE CAPM?

A. As noted by Morningstar, the maturity of the risk-free security should approximate the life of the underlying investment:

> The traditional thinking regarding the time horizon of the chosen Treasury security is that it should match the horizon of whatever is being valued. When valuing a business that is being treated as a going concern, the appropriate Treasury yield should be that of a

[98] *See* Direct Testimony of David C. Parcell, at 40. As noted below, Mr. Parcell does not rely on his CAPM results in his ultimate 9.30 percent ROE recommendation.

> long-term Treasury bond. Note that the horizon is a function of the investment, not the investor. If an investor plans to hold stock in a company for only five years, the yield on a five-year Treasury note would not be appropriate since the company will continue to exist beyond those five years.[99]

That view is supported by Pratt and Grabowski, who recommend a similar approach to selecting the risk-free rate, noting that "[i]n theory, when determining the risk-free rate and the matching ERP you should be matching the risk-free security and the ERP with the period in which the investment cash flows are expected."[100]

Q. PLEASE BRIEFLY EXPLAIN THE TERM "DURATION" AND EXPLAIN WHY IT IS IMPORTANT IN THIS CONTEXT.

A. In finance, "duration" (whether for bonds or equity) typically refers to the present value weighted time to receive the security's cash flows. In terms of its practical application, duration is a measure of the percentage change in the market price of a given stock in response to a change in the implied long-term return of that stock. A common portfolio strategy is to match the duration of investments with the term of the underlying asset in which the funds are being invested, or the term of a liability being funded.

Because the term of the risk-free rate should match the horizon of the underlying investment, it is appropriate to consider the duration of equity investments (often referred to as "Equity Duration") of the subject company when

[99] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook, at 44.
[100] Shannon Pratt and Roger Gabrowski, Cost of Capital: Applications and Examples, 3rd Ed. (Hoboken, NJ: John Wiley & Sons, Inc., 2008), at 92. "ERP" is the Equity Risk Premium.

selecting the Treasury yield used as the risk-free rate in the CAPM. If the average Equity Duration of the proxy group is closer to 30 years than to the frequency of rate requests, it would be appropriate to use the longer-term security as the measure of the risk-free rate.

Q. HAVE YOU CALCULATED THE EQUITY DURATION FOR MR. PARCELL'S PROXY GROUP?

A. Yes, I have. Using the stock price, dividend, and growth rate data contained in Exhibit DCP-2 Schedule 8, I calculated the average Equity Duration for each of Mr. Parcell's proxy companies. Those results, which are provided in Rebuttal Exhibit No. RBH-12, indicate the average Equity Duration is approximately 31.00 years. Consequently, the 30-year Treasury yield is the appropriate measure of the risk-free rate.

Q. PUTTING ASIDE THE ISSUE OF EQUITY DURATION, DOES MR. PARCELL'S CONSTANT GROWTH DCF MODEL RECOGNIZE THE PERPETUAL NATURE OF EQUITY?

A. Yes, it does. The Gordon model, which is the basis of the Constant Growth DCF model, defines the price of a share of stock as:

$$P_0 = \frac{D_1}{(k-g)} \quad [3]$$

where P_0 is the expected price, D_1 is the expected dividend in the following year, k is the Cost of Equity, and g is the expected growth rate. If the model's underlying assumptions hold, there is no difference between holding the stock and collecting dividends in perpetuity, or selling the stock at the end of a given holding period. In the latter instance, the price at which the stock is sold (that is, the terminal value) also is defined by Equation [3].

The critical point is that the terminal value represents the perpetual claim on cash flows at that time. If the holding period is five years, the only way the DCF result can remain constant (or reasonable) is if the stock is sold at the prevailing market price, as defined by the Gordon Model. In other words, even if an investor were to hold a share of stock for 20 years, they only would earn their required return if the stock is sold to an investor that values the shares assuming cash flows in perpetuity. The same is true if the initial holding period is five years, ten years, or any other term. If equity was not perpetual, the shares would hold no value at the end of the holding period and the ROE estimates would be implausibly low. It is the perpetual nature of equity that defines the duration of the equity investment and, therefore, that informs the appropriate tenor of the risk-free rate in the CAPM.

Q. WHAT IS YOUR RESPONSE TO MR. PARCELL'S CONCERN REGARDING GIVING SOME WEIGHT TO FORWARD-LOOKING TREASURY YIELDS IN YOUR CAPM ANALYSES?

A. The Cost of Equity is a forward-looking concept and it is important the inputs used in Cost of Equity models reflect market expectations. That is particularly the case since the purpose of this proceeding is to establish the Cost of Equity for Duke

Energy Progress' utility operations on a forward-looking basis. Given the level and magnitude of uncertainty in the Treasury market at the current time, it is particularly important to take into consideration forward-looking measures of market expectations.

Q. DO MARKET-BASED DATA INDICATE THAT INVESTORS SEE A PROBABILITY OF INCREASING INTEREST RATES?

A. Yes. As discussed earlier, there is observable market data indicating investors expect interest rates to increase in the near future. Consensus near-term forecasts of the 30-year Treasury yield reported by *Blue Chip* indicate the market expects long-term rates to reach 3.50 percent by the second quarter of 2020.[101]

Q. DO YOU AGREE WITH MR. PARCELL'S CALCULATION OF THE MRP BASED ON THE HISTORICAL EARNED RETURN ON COMMON EQUITY ("ROCE")?

A. No, I do not. First, it is difficult to reconcile the data in his analysis with actual market experience. For example, Mr. Parcell's analysis assumes that in 2008, investors earned a positive return of 3.03 percent.[102] In 2008, the market lost 37.00 percent of its value; only the year 1931 experienced a greater loss.[103]

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[101] Blue Chip Financial Forecast, Vol. 38, No. 2, February 1, 2019, at 2.
[102] *See* Exhibit DCP-2, Schedule 9.
[103] Duff & Phelps 2018 SBBI Yearbook, Appendix A-1.

Moreover, Mr. Parcell's analysis ignores the well-established inverse relationship between the MRP and interest rates.[104] As demonstrated in Rebuttal Exhibit No. RBH-13, the data contained in Mr. Parcell's Exhibit DCP-2, Schedule 9 produce a statistically significant negative relationship between the MRP and the 20-year Treasury yield. Consequently, if Mr. Parcell chooses to use the current 20-year Treasury bond yield, which remains below the 6.57 percent average over that time, he should recognize that the MRP would be considerably higher than 6.00 percent.[105] Rebuttal Exhibit No. RBH-13 also demonstrates that taking into consideration the inverse relationship between the MRP and interest rates (via both a simple linear regression analysis and a semi-log regression analysis) renders an MRP in the range of 10.39 percent to 10.62 percent, respectively. Those estimates are well above the 6.00 percent MRP included in Mr. Parcell's 6.40 percent CAPM estimate. Further, the MRP represents the additional return required by equity investors to assume the risks of owning the "market portfolio" of equity relative to long-term Treasury securities. As with other elements of Cost of Equity analyses, the MRP is meant to be a forward-looking parameter. As Morningstar observes:

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104 *See* Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*, Financial Management, Summer 1992 at 63-70; Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, *The Risk Premium Approach to Measuring a Utility's Cost of Equity*, Financial Management, Spring 1985 at 33-45; and Farris M. Maddox, Donna T. Pippert, and Rodney N. Sullivan, *An Empirical Study of Ex Ante Risk Premiums for the Electric Utility Industry*, Financial Management, Autumn 1995 at 89-95.

105 *See* Exhibit DCP-2 Schedule 10. 6.00 percent is the approximate average of 7.10 percent, 6.10 percent and 4.70 percent.

> It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.[106]

That is why the MRP estimates used in my CAPM analyses specifically rely on forward-looking, market-based estimates of the expected market return.

Q. DO YOU AGREE WITH MR. PARCELL'S USE OF THE GEOMETRIC MEAN RISK PREMIUMS TO DERIVE HIS MRP ESTIMATE OF 6.00 PERCENT?

A. No, I do not. The important distinction between the arithmetic and geometric averages is that the arithmetic mean assumes each periodic return is an independent observation and, therefore, incorporates uncertainty into the calculation of the long-term average. The geometric mean, by contrast, is a backward-looking calculation that equates a beginning value to an ending value over a specific investment horizon. Geometric averages, therefore, provide a standardized basis of review of historical performance across investments or investment managers. They do not, however, reflect forward-looking uncertainty.

Because there is no uncertainty in past returns, the use of geometric averages is appropriate when comparing investment performance on a retrospective basis. On a prospective basis, however, uncertainty exists and should be taken into

106 Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills, and Inflation Valuation Yearbook, at 53.

consideration when developing return expectations and requirements. That is why investors and researchers commonly use the arithmetic mean when estimating the risk premium over historical periods.

Lastly, investment risk, or volatility, typically is measured on the basis of the standard deviation. The standard deviation, in turn, is a function of the arithmetic, as opposed to the geometric mean. In that regard, the Beta coefficients applied in CAPM analyses are a function of the standard deviation of returns.[107] In any case, Morningstar notes that:

> The arithmetic average equity risk premium can be demonstrated to be the most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of the stock market returns and the riskless rates is the relevant number.[108]

Q. DO YOU AGREE WITH MR. PARCELL'S USE OF THE TOTAL RETURN ON LONG-TERM GOVERNMENT BONDS IN HIS CALCULATION OF THE HISTORICAL MRP?

A. No, I do not. The MRP should reflect the difference between the arithmetic average return on large company stocks and the income-only return on long-term government bonds as reported by Duff & Phelps (producing an estimated risk

[107] *See* Direct Testimony of Robert B. Hevert, at 35.
[108] Morningstar, Inc., 2013 Ibbotson Stocks, Bonds, Bills and Inflation Valuation Yearbook at 56.

premium in 2017 of 7.10 percent).[109] Mr. Parcell, however, calculates the risk premium as the difference between the total return on those two asset classes, implying a risk premium of 4.70 percent to 6.10 percent in 2017.[110]

As Duff & Phelps points out, the total return on a security is composed of three components: (1) the income return; (2) capital gains (or capital losses, if the value of the security falls); and (3) reinvestment return.[111] The income return is generally defined as the coupon, or interest rate on the security, which does not change over the life of the security. In contrast, the value of the security rises or falls as interest rates change, resulting in uncertain capital gains.[112] As such, the income return is the "riskless" component of the total return, and should be used in calculating the MRP.

Q. PLEASE SUMMARIZE MR. PARCELL'S CRITIQUE OF THE *EX-ANTE* MRP ESTIMATES INCLUDED IN YOUR CAPM ANALYSIS.

A. Mr. Parcell suggests my Constant Growth DCF methodology over-states the expected market return and states that the "use of U.S. Treasury securities as the baseline for the market risk premium is improper at this time due to the effects of the Federal Reserve's Quantitative Easing on U.S. Treasury yields."[113]

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109 *See* Duff & Phelps, 2018 SBBI Yearbook at 6-17.
110 *See* Direct Testimony of David C. Parcell, at 38.
111 *See* Duff & Phelps 2018 SBBI Yearbook, at 2-7.
112 Additionally, the standard deviation of the income return on long-term government bonds (2.60 percent, with a Coefficient of Variation ("CoV") of 0.52 percent) is less than the standard deviation of the total return (9.90 percent, with a CoV of 1.65 percent), further indicating that the income return has less variability, and therefore lower risk, than the total return.
113 Direct Testimony of David C. Parcell, at 56.

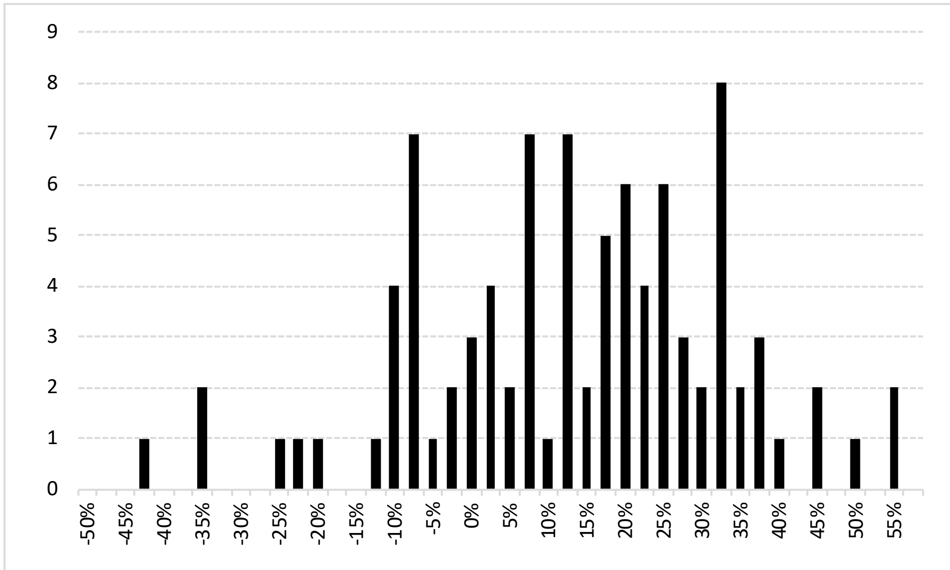
Q. WHAT IS YOUR RESPONSE TO MR. PARCELL'S CONCERN THAT YOUR MRP IS OVER-STATED?

A. I compared my DCF-based market return results to actual observed returns from 1926 to 2017 and found that the 15.29 percent and 16.71 percent estimates presented in my Prefiled Direct Testimony, which Mr. Parcell asserts are "over-stated", represent on average approximately the 54nd percentile of the actual returns. In other words, of the 92 annual observations, 44 were 15.29 percent or higher (*see* Chart 4, below). By that measure, my estimate is entirely consistent with the historical experience, and not at all "over-stated". Moreover, given the historical volatility in market returns (as noted by Duff & Phelps, the long-term standard deviation of returns is 19.80 percent[114]), my total return estimates of 15.29 percent and 16.71 percent are statistically indistinguishable from the long-term arithmetic average of 12.06 percent.[115]

[114] The standard deviation on the rate of return on an investment is a measure of the volatility of the investment. For large company stocks, the average variation in the annual market return around the long-term average return of 12.06 percent is 19.80 percent, indicating a high level of volatility. That is, on average, the difference between the market return in any year, and the average return of 12.06 percent, is 19.80 percent.

[115] *See* Duff & Phelps, 2018 SBBI Yearbook at Appendix A-1, A-7, Rebuttal Exhibit No. RBH-14.

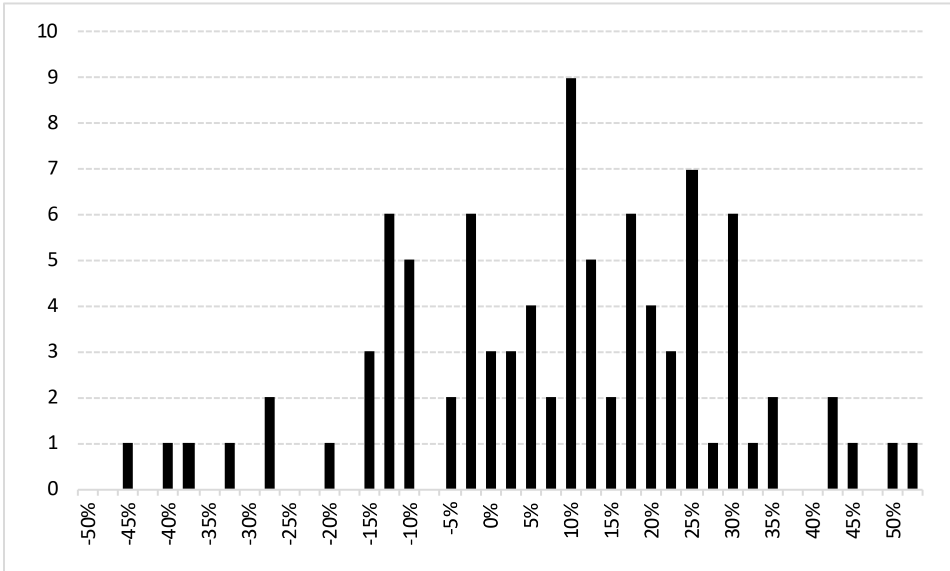
Chart 4: Frequency Distribution of Observed Market Returns, 1926 - 2017[116]



Similar to my review of observed market returns, I gathered the annual Market Risk Premia reported by Duff & Phelps and produced a histogram of the observations. The results of that analysis, which are presented in Chart 5, demonstrate that MRPs of at least 13.52 percent (the high end of the range of the MRP estimates in my Direct Testimony) occurred frequently, including four of the last nine years.

[116] *See* Duff & Phelps, 2018 SBBI Yearbook at Appendix A-1, Rebuttal Exhibit No. RBH-14.

Chart 5: Frequency Distribution of Market Risk Premia, 1926 - 2017[117]



When considered in the context of observed outcomes, Market Risk Premium estimates in the range of 12.10 percent to 13.52 percent are reasonable.

Q. WHAT IS YOUR RESPONSE TO MR. PARCELL'S CONCERN REGARDING THE USE OF LONG-TERM TREASURY YIELDS AS THE BASELINE FOR CALCULATING THE MRP IN THE CURRENT CAPITAL MARKET?[118]

A. If Mr. Parcell is concerned about the use of current long-term Treasury yields due to the lingering effects of the Federal Reserve's Quantitative Easing program, it

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117 *See* Duff & Phelps, 2018 SBBI Yearbook at Appendix A-1, A-7, Rebuttal Exhibit No. RBH-14. Chart 5 above shows MRPs of 12.10 percent to 13.52 percent fall approximately in the middle of the historical observations.

118 Prefiled Direct Testimony of David C. Parcell, at 56.

would have been appropriate to consider the use of a forward-looking measure of the risk-free rate in the application of the CAPM. However, he did not do so.

Q. DOES MR. PARCELL RELY ON HIS CAPM ANALYSIS IN DETERMINING HIS RECOMMENDED ROE?

A. No, he does not. It appears Mr. Parcell does not believe his CAPM result provides a reasonable estimate of the Company's ROE.[119] On that point, I agree with him. As discussed above, however, adjusting his analysis to account for the inverse relationship between Treasury bond yields and the MRP produces results that are far more reasonable and, in fact, are fairly consistent with those in my updated CAPM analysis.[120]

119 Direct Testimony of David C. Parcell, at 45-46.
120 *See* Rebuttal Exhibit No. RBH-13.

The Comparable Earnings Method and Market-to-Book Ratios

Q. PLEASE DESCRIBE MR. PARCELL'S APPLICATION OF THE CEM ANALYSIS.

A. Mr. Parcell's Comparable Earnings analysis reviews the realized ROCE for several groups of companies (our respective proxy groups, and the S&P 500 companies) and evaluates investor acceptance of those returns by reference to the resulting M/B ratio.[121] Mr. Parcell argues historical returns of 9.80 percent to 10.40 percent have been adequate to produce M/B ratios of 147.00 percent to 166.00 percent.[122] His review of S&P 500 companies, which Mr. Parcell considers to be representative of the competitive sector of the economy, indicates average earned returns from 12.40 percent to 13.40 percent, with M/B ratios ranging from 242.00 percent to 275.00 percent.[123] Lastly, Mr. Parcell compares the risk levels of the utility industry with those of the competitive sector, by considering such metrics as the Value Line Safety Rank, Value Line Beta coefficient, and Value Line Financial Strength.[124]

Based on his Comparable Earnings analysis, Mr. Parcell concludes "the ROE for the proxy utilities is no more than 9.00 percent to 10.00 percent."[125] Mr. Parcell further argues that "the fact that M/Bs substantially exceeds 100 percent

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121 *See* Direct Testimony of David C. Parcell, at 41-44.
122 *Ibid.*, at 43.
123 *Ibid.*, at 44.
124 *Ibid.*.; Exhibit DCP-1, Schedule 13.
125 *Ibid*.

indicates that historic and prospective ROEs of 9.5 percent reflect earnings levels that are well above the actual earned ROE for those regulated companies."[126]

Q. PLEASE NOW PROVIDE A BRIEF DEFINITION OF THE M/B RATIO.

A. The M/B ratio equals the market value (or stock price) per share, divided by the total common equity (or the book equity) per share. Book value per share is an accounting construct, which reflects historical costs. In contrast, market value per share (*i.e.*, the stock price) is forward-looking, and is a function of many variables, including (but not limited to) expected earnings and cash flow growth, expected payout ratios, measures of "earnings quality," the regulatory climate, the equity ratio, expected capital expenditures, and the expected return on book equity.[127] It follows, therefore, that the M/B ratio likewise is a function of numerous variables in addition to the historical or expected ROCE.

Q. WITH THOSE POINTS IN MIND, DO YOU HAVE ANY CONCERNS WITH THE STRUCTURE OF MR. PARCELL'S COMPARABLE EARNINGS ANALYSIS?

A. Yes, I do. Regarding the structure of his analysis, I disagree with Mr. Parcell's analytical construct that the earned ROCE (the "Return on Average Common Equity" presented in his Schedule 11, page 1 of 2) should be used as the determinant

[126] *Ibid*., at 45.

[127] *See*, for example, Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006 at 366. Dr. Morin cites several academic articles that address the various factors that affect the Market-to-Book ratio for utilities.

of the M/B ratio. To that point, on page 42 of his direct testimony, Mr. Parcell states he does not assume that the M/B ratio is the sole determinant of ROCE. Nonetheless, Mr. Parcell does not mention any other variables he considered in his assessment of M/B ratios, or how those variables may affect his assessment. Nor does Mr. Parcell provide a quantitative measure of the relationship between M/B ratios and the earned ROCE, or an empirical basis for his conclusion regarding the appropriate M/B ratio. Rather, Mr. Parcell suggests M/B ratios over 100.00 percent indicate excessive earnings levels, without empirical support for that position.[128]

Like the P/E ratio, the M/B ratio is used in practice as a measure of relative, not absolute valuation. That is, it typically is used by investors to assess the value of an asset or enterprise relative to the prevailing M/B ratios of comparable assets or enterprises. Therefore, investors would be more likely to assess the M/B ratio of an electric utility relative to the proxy group median of 155.00 percent rather than, for example, 100.00 percent. Given the theoretical and practical concerns discussed above, I disagree with Mr. Parcell's position that M/B ratios above 100.00 percent indicate that authorized ROEs exceed investors' return requirements.

128 *See* Direct Testimony of David C. Parcell, at 45.

Q. WHY DO YOU DISAGREE WITH MR. PARCELL'S VIEW THAT THE M/B RATIO MAY BE AN INDICATION OF EARNED RETURNS IN EXCESS OF REQUIRED RETURNS?

A. In the context of rate setting, the M/B ratio often is discussed relative to the Constant Growth DCF model. Under certain restrictive assumptions, that model can be rewritten to express the M/B ratio as follows: [129]

$$\frac{M}{B} = \frac{ROE-G}{k-G} \quad [4]$$

where ROE is the return on book equity, *k* is the risk-adjusted discount rate, and *g* is the long-term growth rate in dividends per share. Rearranging Equation [3] produces the familiar Gordon Growth model discussed earlier:

$$P_0 = \frac{D_1}{(k-g)} \ \ (see, \text{Equation [3] above})$$

and the Constant Growth DCF model:

$$k = \frac{D}{P} + g \quad [5]$$

That is, Mr. Parcell's assumed relationship between the accounting Return on Equity and the Cost of Equity simply falls from the Constant Growth DCF model, itself; one cannot be assumed without the other. As such, any inferences drawn regarding relationships among M/B, ROE, and *k* from Equation [4] rely on the explicit acceptance of all assumptions underlying the Constant Growth DCF model,

129 B. Branch, A. Sharma, C. Chawla, and F. Tu, *An Updated Model of Price-to-Book*, Journal of Applied Finance, No. 1 (2014).

including a constant dividend growth rate in perpetuity, and the constancy of the DCF result. Equally important, Equation [4] only can be solved from the Constant Growth DCF model if we assume: (1) a constant dividend payout ratio in perpetuity; (2) no stock issuances or repurchases; and (3) that the firm is in a steady state, in which the book equity growth rate equals the dividend growth rate, in perpetuity. Taken together, those assumptions are quite restrictive, and call into question the definitive linkage between M/B, ROE, and *k* that Mr. Parcell assumes.

Q. ARE YOU AWARE OF ANY PUBLISHED RESEARCH THAT ADDRESSES THE ISSUE OF M/B RATIOS IN THE CONTEXT OF THE CONSTANT GROWTH DCF MODEL?

A. Yes. As noted above, if we accept all assumptions that underlie the Constant Growth DCF model, Equation [4] suggests if M/B exceeds unity, then ROE exceeds *k*. Branch *et al.* point out that M/B is generally greater than or equal to one because the value of the firm as a going concern (price per share) generally exceeds the liquidation value (book value per share) and "…firms having going concern values greater than their liquidation values (most firms) and firms having finite prices (all firms) should have ROE > R> G."[130] Taken from that perspective M/B ratios in excess of unity should not be surprising: if the liquidation value exceeds the market value, the company would be liquidated.

130 Branch et al. (2014), at 18. [clarification added] Here, R = the Cost of Equity, and G = growth.

Q. HAVE M/B VALUES GENERALLY EXCEEDED 1.00 FOR THE BROAD EQUITY MARKET?

A. Yes, they have. As Chart 6 (below) demonstrates, since 1990 the average M/B ratio for the S&P 500 Index has been 2.87; it has never reached unity.

Chart 6: S&P 500 Market/Book Ratio Over Time[131]

If investors, over many years and across many companies, believed the returns they expected had so significantly exceeded the returns they required, they would adjust their requirements. Under Mr. Parcell's construct, the disequilibrium between expected and required returns would dissipate, and take with it the disequilibrium between market and book values. But that has not occurred.

131 Source: Bloomberg Professional.

That finding also is consistent with the position that M/B ratios greater than 1.00 simply mean that firms are worth more as a going concern than the book value of their assets. This is consistent with U.S. Generally Accepted Accounting Principles ("GAAP") and International Financial Reporting Standards, which require firms to carry the value of assets on their books at the historical cost of those assets; only under specific circumstances may the value of certain financial investments be carried at market value.[132] As a result:

> …given market efficiency, the [M/B] ratio is intrinsically an accounting phenomenon; that is, on first order, [M/B] is determined by how accountants measure book value… If all assets and liabilities were accounted for using unbiased mark-to-market or "fair value" accounting, [M/B] would be equal to unity for all levels of risk….A good example is a pure investment fund where "net asset value" typically equals market value, since accountants apply mark-to-market accounting to these funds….For most other firms, accountants do not mark the net assets involved with operations to market. The application of historical cost accounting, exacerbated by the application of conservative accounting, introduces a difference between price and book value.[133]

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[132] Financial Accounting Standards Board Rule 157.

[133] S. H. Penman, S.A. Richardson, and I. Tuna, "*The Book-to-Price Effect in Stock Returns: Accounting for Leverage*", Journal of Accounting Research, 45:2, May 2007. The authors use the reciprocal of the M/B and different notation. In the quote above, I have replaced B/P (where P denotes price per share) with M/B for ease of exposition.

Q. ARE YOU AWARE OF RESEARCH THAT HAS FOCUSED ON THE M/B RATIOS OF REGULATED UTILITIES?

A. Yes, I am. Research focusing on utilities has long concluded that regulation may not necessarily result in M/B ratios approaching unity. As noted by Phillips in 1993:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.' [134]

In 1988 Bonbright stated:

> In the first place, commissions cannot forecast, except within wide limits, the effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, whatever the initial market prices may be, they are sure to change not only with the changing prospects for earnings, but with the changing outlook of an inherently volatile stock market. In short, market prices are beyond the control, though not beyond the influence, of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it ... would result in harmful, uneconomic shifts in public utility rate levels. [135]

And, in 1972 Stewart Myers came to the following conclusion:

> In short, a straightforward application of the cost of capital to a book value rate base does not automatically imply that the market and book values will be equal. This is an obvious but important point. If straightforward approaches did imply equality of market and book

[134] Charles F. Phillips, The Regulation of Public Utilities – Theory and Practice (Public Utility Reports, Inc., 1993) at 395.

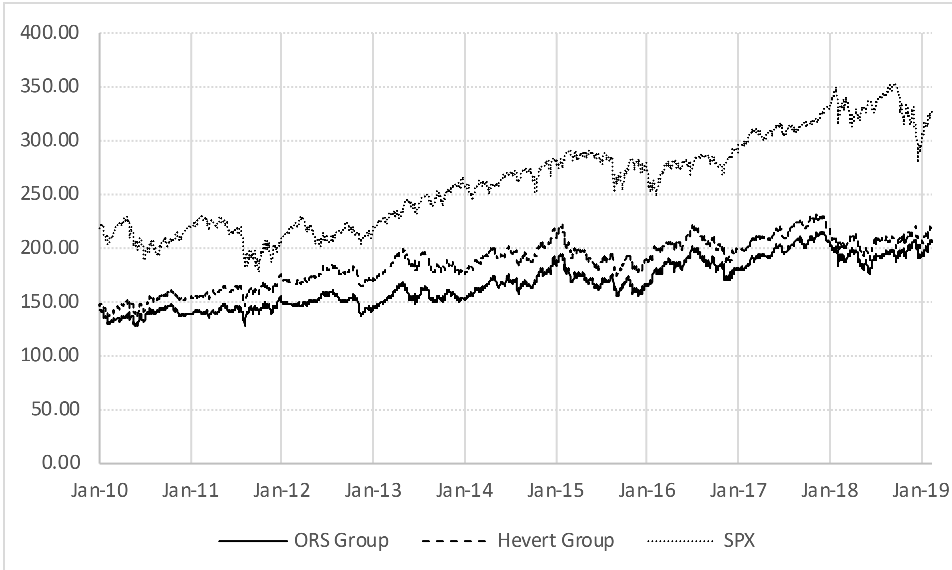
[135] James C. Bonbright, Albert L. Danielsen and David R. Kamerschen, Principles of Public Utility Rates (Public Utilities Reports, Inc., 1988), at 334.

> values, then there would be no need to estimate the cost of capital. It would suffice to lower (raise) allowed earnings whenever markets were above (below) book.[136]

Just as M/B ratios for the S&P 500 have remained above 1.00, so have those of Mr. Parcell's and my comparison companies. Chart 7 (below) demonstrates that since 2010, both groups' M/B ratios have exceeded unity, and have generally moved in parallel with the S&P 500 M/B ratio. Although the broad market represents a cross section of risk and return profiles, of which the utility sector is just one, the observed variation in market-level M/B ratios speaks to the time-varying influence of general macroeconomic factors.

136 Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, The Bell Journal of Economics and Management Science, Vol. 3, No. 1 (Spring 1972), at 58-97.

Chart 7: Comparison Groups, S&P 500 Market Book Ratios (2010 – 2019)[137]



An interesting observation is that approximately 73.00 percent to 83.00 percent of the change in the comparison company groups' M/B ratios is explained by changes in the S&P 500 M/B ratio.[138] That is, macroeconomic factors affect utilities as well as non-regulated entities.

Q. DOES MR. PARCELL CONSIDER VARIABLES OTHER THAN THE EARNED ROE IN ARRIVING AT HIS COST OF EQUITY ESTIMATE?

A. Not explicitly. Mr. Parcell considers differences in the level of risk between the proxy group and the S&P 500 to arrive at his conclusion that unregulated companies

137 Source: S&P Global Market Intelligence.

138 The proxy group M/B ratios are also highly correlated with the S&P 500 M/B ratio. The correlation coefficient of Mr. Parcell's proxy group is 90.85 percent, and the correlation coefficient of my proxy group is 85.34 percent.

are relatively more risky than regulated companies, but that point is not in dispute. Beyond that, Mr. Parcell does not consider specific variables that may affect M/B ratios.

Q. WHAT ARE THE IMPLICATIONS OF HIS FAILURE TO DO SO?

A. By failing to reflect other variables, Mr. Parcell's CEM analysis effectively assumes that the only factor that has a "direct relationship" to the M/B ratio is the earned ROE. If that were the case, the relationship between earned returns and the M/B ratio could be estimated via linear regression analysis. Using the data contained in Exhibit DCP-1, Schedule 11, I developed a simple linear regression, in which the M/B ratio is the dependent variable, and the ROCE is the sole explanatory variable.[139]

Q. PLEASE BRIEFLY DESCRIBE HOW YOUR REGRESSION ANALYSIS IS STRUCTURED.

A. My first analysis is focused on the average equity returns and M/B ratios presented in Exhibit DCP-1, Schedule 11.[140] For Mr. Parcell's proxy groups, I performed a linear regression analysis in which the M/B ratio was modeled as a function of the ROCE. In that case, the regression equation, which explains about 37.00 percent of the variation in the M/B ratios included in Mr. Parcell's Schedules, was statistically significant at the 95.00 percent confidence level. I then used the

139 S*ee* Rebuttal Exhibit No. RBH-15.

140 Because Mr. Parcell did not provide projected Market-to-Book ratios, my analysis necessarily was based on historical data.

regression coefficients to determine the ROCE that would be associated with various levels of M/B ratios.

Q. ON WHAT BASIS DID YOU SELECT THE RANGE OF M/B RATIOS?

A. Although Mr. Parcell did not specify what he would consider to be the optimal ratio, he did note that an objective of setting the ROE would be to "attract new equity capital without dilution."[141] Because dilution would be a function of both equity issuance costs and the market pressure associated with new shares, the M/B ratio should exceed 100.00 percent in an amount sufficient to reflect those costs. Assuming a dilution cost of 10.00 percent (reflecting both direct costs and market pressure) would be quite reasonable, if not conservative. Based on a 10.00 percent dilution rate, the adjusted M/B ratio would be approximately 111.00 percent.

Using the regression coefficients (*see* Rebuttal Exhibit No. RBH-15), I then calculated the ROE that would correspond to an M/B ratio of 111.00 percent for Mr. Parcell's proxy group. The resulting ROE is 4.30 percent, below the Company's cost of debt. Clearly, that is an unreasonable result that would fail to meet the *Hope* and *Bluefield* standards of a fair return. As such, those results have no relevance to the determination of Duke Energy Progress' Cost of Equity.

141 *See* Direct Testimony of David C. Parcell, at 42.

Q. WHAT WOULD BE THE RESULT IF REGULATORY COMMISSIONS DID FORCE M/B RATIOS TOWARD UNITY?

A. Looking to Mr. Parcell's proxy groups, the average capital loss for equity investors would be about 49.92 percent.[142] If investors believed the extent to which M/B ratios exceed 1.00 is a measure of the difference between their expected and required returns, and that regulatory commissions would authorize returns that would set the market value equal to the book value of utility stocks, there would be a significant loss of value.

That loss would not just affect investors, it also would substantially diminish the ability of utilities to attract external capital. Moreover, such a significant departure from regulatory practice would introduce a degree of regulatory risk that would pressure credit ratings; that pressure would be exacerbated by the diluted cash flow resulting from the significantly lower authorized equity returns. Because they are so dependent on external capital to fund the long-term investments needed to provide safe and reliable service, the diminished access and increased cost would be to the detriment of ratepayers, as well as investors.

To summarize, if regulatory commissions were to set rates with an eye toward moving the M/B ratio toward unity, that practice may well impede the

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[142] Based on the 30-day average M/B ratio for Mr. Parcell's proxy group as of February 15, 2019 of 199.70. 49.92 percent = (199.70 – 100.00) / 199.70.

ability to attract the capital required to support its operations, especially in markets during which the M/B ratio for the overall market is significantly in excess of 100.00 percent.

Q. DID YOU PERFORM SIMILAR ANALYSES TO DETERMINE THE M/B RATIO THAT WOULD BE ASSOCIATED WITH DUKE ENERGY PROGRESS' RECOMMENDED ROE?

A. Yes, I did. Based on Mr. Parcell's proxy group, I calculated the M/B ratio that correspond to an ROE of 10.75 percent. Using the data in Exhibit DCP-1, Schedule 11, I then calculated the percentile in which the implied M/B ratio fell within the historical observations. The results of those analyses are presented in Table 4 (below).

Table 4: Implied Market-to-Book Ratios at 10.75 percent ROE[143]

	Implied Market-to-Book Ratio	**Relative Rank (Percentile)**	**Implied ROE**
Parcell Proxy Group	163.06 percent	62.00 percent	10.75 percent

Q. DO YOU HAVE ANY CONCERNS WITH THE ESTIMATES OF EARNED RETURN ON COMMON EQUITY USED BY MR. PARCELL?

A. Yes, I do. Mr. Parcell appropriately calculates the proxy companies' earned ROCE for historical years using average book value, but calculates the earned ROCE in

143 *See* Rebuttal Exhibit No. RBH-15.

future periods (2017, 2018 and 2020-2022) using end of year book value. Mr. Parcell's forward-looking ROCE estimates are, therefore, further understated.

Q. DO YOU HAVE ANY COMMENTS REGARDING THE LEVEL OF SUBJECTIVITY OF MR. PARCELL'S CEM ANALYSIS?

A. Yes. Because Mr. Parcell's analysis is highly subjective, his analysis cannot be replicated. We therefore cannot say his view represents that of the market. Moreover, although Mr. Parcell suggests the current level of M/B ratios indicates earned returns exceed the Cost of Equity, he fails to identify the ratio that would set the required return equal to the realized return. It is not surprising that Mr. Parcell has not done so because, as he recognizes, there are a number of variables beyond the earned ROE that affect the M/B ratio. Because the CEM analysis defines the upper end of Mr. Parcell's ROE range, the subjective nature of his conclusions has a significant effect on his ROE recommendation (*i.e.*, 9.30 percent).

Q. WHAT ARE YOUR CONCLUSIONS REGARDING MR. PARCELL'S CEM RESULTS?

A. My principal conclusion is that Mr. Parcell's CEM results underestimates Duke Energy Progress' Cost of Equity. Based on the data presented in Exhibit DCP-1, Schedule 11, my recommended range (*i.e.*, 10.25 percent to 11.00 percent) is consistent with analysts' forward-looking estimates of the proxy companies' ROE[144] and is a more reasonable estimate of the Company's Cost of Equity.

Flotation Costs

Q. PLEASE BRIEFLY DESCRIBE MR. PARCELL'S POSITION REGARDING THE FLOTATION COST ADJUSTMENT.

A. Mr. Parcell does not include a flotation cost adjustment, as he states there has been no demonstration that Duke Energy has issued, or intends to issue, any additional stock with the intention of infusing equity into Duke Energy Progress.[145] Mr. Parcell further states that no additional return resulting from flotation costs is needed because, if Duke Energy were to issue additional shares of common stock, the existence of "stock well above book value indicates that existing shareholders will have their book value enhanced."[146]

Q. IS THERE SUPPORT FOR THE POSITION THAT FLOTATION COSTS SHOULD BE RECOVERED ON A PERPETUAL BASIS DUE TO THE INDEFINITE LIFE OF COMMON EQUITY?

A. Yes. As noted by Dr.. Morin:

> Unlike the case of bonds, common stock has no finite life so that flotation costs cannot be amortized and therefore must be recovered

144 As shown on Exhibit DCP-2, Schedule 11, the average and median projected ROCE from Value Line for my and Mr. Parcell's proxy groups range from 10.00 percent to 11.00 percent, well above Mr. Parcell's 9.30 percent ROE recommendation and consistent with my recommended range.

145 *See* Direct Testimony of David C. Parcell, at 58.

146 *Ibid*.

by way of an upward adjustment to the allowed return on equity.[147]

Dr. Morin further notes that the equity capital raised in a given offering remains on the balance sheet, and as such, it "would be unfair to burden the current generation of ratepayers with the full costs of raising capital when the benefits of that capital extend indefinitely.[148] Further, to the extent Duke Energy Progress is not allowed to recover flotation costs, investors are denied a portion of their opportunity to earn the required return.

Q. DO YOU AGREE WITH MR. PARCELL'S POSITION THAT IF DUKE ENERGY WERE TO ISSUE ADDITIONAL STOCK, THE POTENTIAL ENHANCEMENT IN EXISTING SHAREHOLDER BOOK VALUE NEGATES THE NEED TO RECOVER FLOTATION COSTS?[149]

A. No, I do not. Because flotation costs permanently reduce the equity portion of the balance sheet, an adjustment must be made to the ROE to ensure that the authorized return enables investors to realize their required return. As a practical matter, utilities typically trade at levels in excess of book value (*see* for example, Chart 7 above). Whether they trade at M/B value multiples based on ongoing expectations or as a result of an acquisition premium does not affect the permanent reduction to the book value of equity caused by flotation costs. Consequently, I do not agree

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147 Roger A. Morin, New Regulatory Finance, Public Utilities Reports, Inc., 2006, at 327.

148 *Ibid.* Here, Dr. Morin is speaking to the issue of recovering flotation costs through rates as they are incurred.

149 Direct Testimony of David C. Parcell, at 58.

that the fact that the market value of Duke Energy's common stock exceeds its book value negates the need to recover flotation costs.

Q. HAS DUKE ENERGY RECENTLY ISSUED COMMON STOCK?

A. Yes, it has. As noted in my Direct Testimony and in the Direct Testimony of Company Witness Mr. Sullivan, on March 6, 2018, Duke Energy issued 21,275,000 shares of common equity.[150]

IV. RESPONSE TO THE DIRECT TESTIMONY OF MS. LACONTE

Q. PLEASE SUMMARIZE MS. LACONTE'S TESTIMONY REGARDING THE COMPANY'S ROE.

A. Ms. LaConte asserts the Company's proposed ROE is "overstated" based on her review of "industry trends".[151] She argues that "the implied risk premium in DEP's proposal is overstated, which results in an over-stated ROE."[152] Ms. LaConte does not undertake an independent, market-based analysis of the Company's Cost of Equity.

Q. WHAT IS YOUR RESPONSE TO MS. LACONTE'S ARGUMENT THAT THE TREND OF AUTHORIZED ROES HAS DECLINED SINCE 2010?

A. For the reasons explained in my response to Mr. Parcell, I disagree. Average annual data obscures variation in returns and does not address the number of cases or the jurisdictions issuing orders within a given year. As Chart 3 above demonstrates, if

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150 Direct Testimony of Robert B. Hevert, at 66.
151 Direct Testimony of Billie S. LaConte, at 29-30.
152 *Ibid*., at 30.

we look to all authorized ROEs rather than the simple average, there has been no downward trend.

Q. WHAT IS YOUR RESPONSE TO MS. LACONTE'S ARGUMENT YOUR "IMPLIED RISK PREMIUM" IS OVER-STATED?

A. First, Ms. LaConte appears to be referring to the Equity Risk Premium component of the Bond Yield Plus Risk Premium analysis. Her position is that because the long-term historical average Equity Risk Premium is below the Equity Risk Premium implied by the regression equation, the "implied" Equity Risk Premium must be "overstated".

As discussed in my Direct Testimony, the regression coefficients specifically recognize that as interest rates decrease, the Equity Risk Premium increases.[153] Although the average Equity Risk Premium is provided in Exhibit RBH-6 of my Direct Testimony, it is never used as a basis for my ROE recommendation. Rather, my Equity Risk Premium estimate is based on a regression analysis, which continues to show a statistically significant, inverse relationship between the Equity Risk Premium and the Treasury bond yield. To apply an average Equity Risk Premium to the current and projected Treasury bond yield, as Ms. LaConte suggests, would ignore that inverse relationship and significantly understate the Cost of Equity.

153 Direct Testimony of Robert B. Hevert, at 39-41.

If we were to apply Ms. LaConte's long-term historical average Equity Risk Premium of 4.65 percent, we also would need to apply the average historical 30-year Treasury bond yield over the same time period, 7.95 percent.[154] Because the 4.30 percent projected 30-year Treasury bond yields is below the average historical Treasury bond yield of 7.95 percent, it makes sense that the implied Equity Risk Premium would be higher than the average. I therefore disagree the "implied risk premium" is over-stated, believe the model is properly specified.

Q. AT PAGE 37 OF HER TESTIMONY MS. LACONTE NOTES THAT THE RISK PREMIUM IS ASSOCIATED WITH THE RISKINESS OF THE SECURITY. DO YOU HAVE ANY THOUGHTS REGARDING MS. LACONTE'S POINT IN THAT REGARD?

A. Yes, I do. Ms. LaConte speaks to the risk premium associated with a "riskier security"[155] in the context of the Bond Yield Plus Risk Premium method. Within the methods used to estimate the Cost of Equity, the Beta coefficient, as applied in the CAPM, often is used as the measure of relative risk. An important issue, however, is whether the CAPM fully measures the Cost of Equity for comparatively low-Beta coefficient companies, such as utilities. That is, the issue of relative risk brings up the question of whether the CAPM tends to under-estimate the Cost of

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154 Ms. LaConte mis-states the average risk premium from January 1990 to October 2018 is 4.65 percent. In actuality, the 4.65 percent long-term average is over the period from January 1980 to October 2018. The average (lagged) 30-year Treasury Bond yield over the January 1980 to October 2018 time period is 7.95 percent. *See* Exhibit RBH-6.

155 Direct Testimony of Billie S. LaConte, at 37.

Equity for utilities. If that is the case, Ms. LaConte's view regarding the equity risk premium is further called into question. As discussed below, we can address that issue by reference to the Empirical Capital Asset Pricing Model.

Q. PLEASE BRIEFLY DESCRIBE THE EMPIRICAL CAPITAL ASSET PRICING MODEL ("ECAPM", OR "EMPIRICAL CAPM").

A. The Empirical CAPM adjusts for the CAPM's tendency to under-estimate returns for companies that (like utilities) have Beta coefficients less than the market mean of 1.00, and over-estimate returns for relatively high-Beta coefficient stocks.[156]

Fama and French succinctly describe the issue addressed by the ECAPM when they note "[t]he returns on the low beta portfolios are too high, and the returns on the high beta portfolios are too low." [157] Similarly, Dr. Morin observes that "[w]ith few exceptions, the empirical studies agree that … low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted."[158] As Dr. Morin also explains, the ECAPM "makes use" of those findings, and estimates the Cost of Equity based on the following equation:[159]

$$k_e = R_f + \alpha + \beta(MRP - \alpha) \qquad [6]$$

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[156] Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006), at 175-176.

Eugene F. Fama and Kenneth R. French, The Capital Asset Pricing Model: Theory and Evidence, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004, at 33.

[158] Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 175.

[159] *Ibid*., at 189.

where α, or "alpha," is an adjustment to the risk/return line, and "MRP" is the Market Risk Premium (defined above). Summarizing empirical evidence regarding the range of estimates for alpha, Dr. Morin explains that the model "reduces to the following more pragmatic form"[160]:

$$k_e = R_f + 0.25(R_m - R_f) + 0.75\beta(R_m - R_f) \quad [7]$$

where:

k_e = the investor-required ROE;

R_f = the risk-free rate of return;

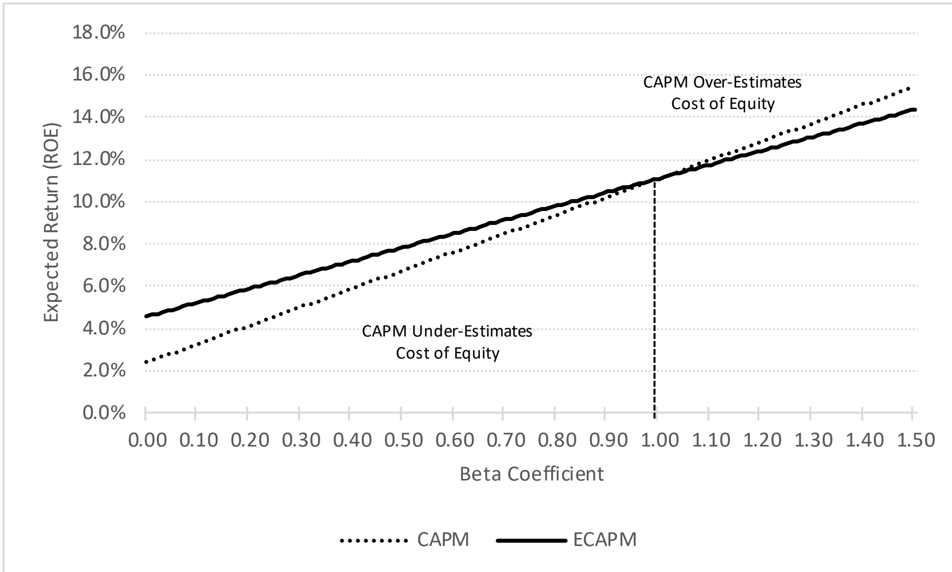
β = Adjusted Beta coefficient of an individual security; and

R_m = the required return on the market.

The relationship between expected returns from the CAPM and ECAPM can be seen in Chart 8, below. That chart, which reflects the current risk-free rate and Market Risk Premium, illustrates the extent to which the CAPM understates the expected return relative to the ECAPM when Beta coefficients are less than 1.00.

160 *Ibid*., at 190. Equations [6] and [7] tend to produce similar results when "alpha" is in the range of 1.00 percent to 2.00 percent. *See* Rebuttal Exhibit No. RBH-16. As Dr. Morin explains, alpha coefficients in that range are highly consistent with those identified in prior published research.

Chart 8: CAPM and ECAPM Expected Returns[161]



The ECAPM is an adjustment to the risk/return line which, as noted in Chart 8 above, is flatter than the CAPM assumes. That adjustment is required even with the use of adjusted Beta coefficients, such as those provide by Value Line. As Dr. Morin observes:

> Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. *The ECAPM and the use of adjusted betas comprised two separate features of asset*

[161] *See* Rebuttal Exhibit No. RBH-16. The finding that the ECAPM is not an adjustment to the Beta coefficient is clear in Equation [6] ($k_e = R_f + \alpha + \beta(MRP - \alpha)$), in which the alpha coefficient increases the intercept (the expected return when the Beta coefficient equals zero), and reduces the Market Risk Premium.

pricing…Both adjustments are necessary.[162]

Q. HAVE YOU UNDERTAKEN ANY INDEPENDENT ANALYSES TO DETERMINE WHETHER THERE IS A RELATIONSHIP BETWEEN BETA COEFFICIENTS AND EXCESS RETURNS PRODUCED BY THE CAPM AND ECAPM?

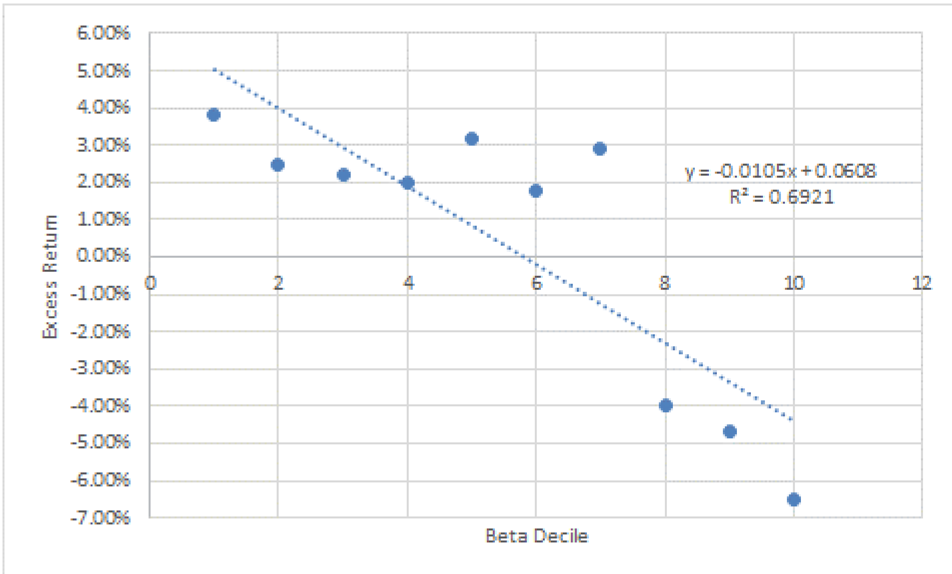
A. Yes. I performed an analysis of excess returns[163] produced by the CAPM, by Beta coefficient decile, over the ten years ended 2018. The analysis compared the observed returns of the companies in the S&P 500 Index to expected returns based on the CAPM. Observed returns were calculated as the total return for each company from the first day of a given year to the end of that year. The expected return for each company was calculated using the CAPM as applied to the following annual data: (1) a risk-free rate equal to the average 30-year Treasury yield for that year; (2) an adjusted Beta coefficient as of the beginning of the year using Bloomberg's standard calculation methodology (two years of weekly return data, using the S&P 500 Index as the comparison benchmark); and (3) a market return equal to the S&P 500 Index total return for that year. The companies were grouped into deciles each year based on their Beta coefficients, and the median excess return (or return deficiency) was calculated for each decile group. Excess returns were

162 Roger A. Morin, New Regulatory Finance, Public Utility Reports, Inc., 2006, at 191 [*emphasis added*].

163 As noted below, "excess returns" is defined as the observed return less the return implied by the CAPM.

calculated as the observed return less the return implied by the CAPM. Chart 9 (below) summarizes those results.

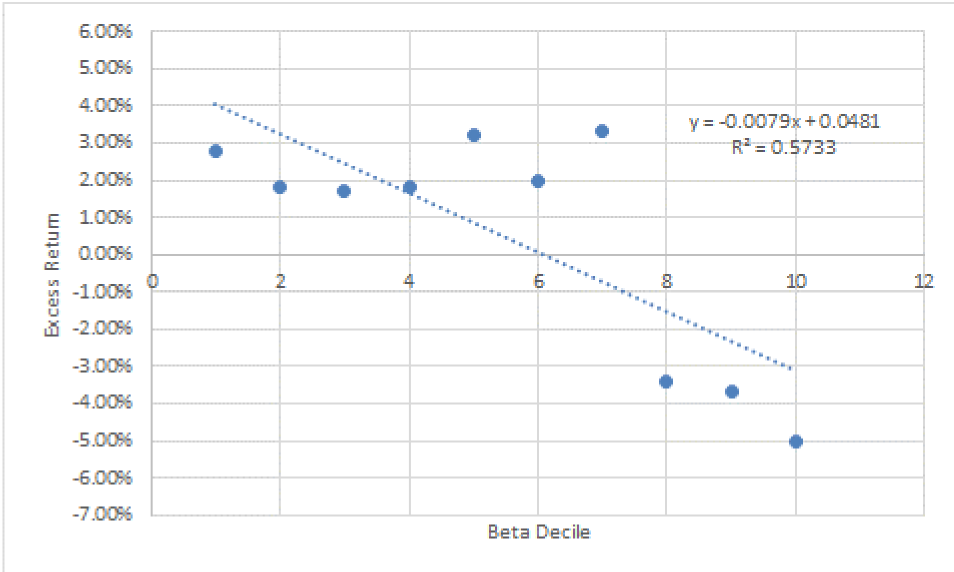
Chart 9: Excess Returns Under CAPM[164]



As Chart 9 demonstrates, the relationship between Excess Return and Beta coefficient deciles is strong, with deciles explaining more than 69.00 percent of the Excess Return. Using the same data and calculating the Excess Return by reference to the ECAPM (as defined by Equation [7], above), produces the same downward sloping relationship, but not to the same degree (see Chart 10, below).

[164] Source: Bloomberg Professional Services.

Chart 10: Excess Returns Under the ECAPM[165]



There are two principal observations to be drawn from the data presented in Charts 9 and 10. First, under the ECAPM the slope coefficient falls somewhat (relative to the CAPM), suggesting a flatter relationship between Beta coefficient deciles and the excess return. The flatter slope moves closer to the point at which the excess return is zero across all deciles. Second, the excess return values are somewhat moderated under the ECAPM; the high excess returns are lower than under the CAPM, and the low excess returns are higher. Again, that finding suggests the ECAPM mitigates, but does not solve the issue of the CAPM underestimating returns for low Beta coefficient firms.

165 Source: Bloomberg Professional Services.

In summary, Charts 9 and 10 support the position that the CAPM tends to underestimate returns for low-Beta coefficient firms, and the ECAPM moderates but does not eliminate that effect. Because the ECAPM addresses Ms. LaConte's view that the equity risk premium assumed in my analyses is too high, I believe it is a reasonable method, and have included results based on the ECAPM in my updated analyses.[166]

V. <u>RESPONSE TO THE DIRECT TESTIMONY OF MR. CHRISS</u>

Q. PLEASE SUMMARIZE MR. CHRISS'S TESTIMONY REGARDING THE COMPANY'S ROE.

A. Mr. Chriss opposes the Company's proposed ROE based on his review of authorized ROEs since 2016 and comparisons to the Company's and Duke Energy Progress' current authorized ROE in South Carolina and North Carolina.[167] He recommends the Commission "closely examine" the Company's proposed ROE "in light of (1) the customer impact of the resulting revenue requirement increase; (2) the use of risk-reducing rate-making structures such as the Company's proposed forward-looking [Grid Improvement Program ("GIP")] rider; and (3) recent rate case ROEs approved by commissions nationwide."[168] Like Ms. LaConte, Mr.

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[166] *See* Rebuttal Exhibit No. RBH-5.

[167] *See* Direct Testimony of Steve W. Chriss, at 7-8, 10-13.

[168] *Ibid*., at 13. Clarification added.

Chriss did not undertake an independent, market-based analysis of the Company's Cost of Equity.

Q. ARE THERE OTHER DISTINCTIONS THAT ARE IMPORTANT TO CONSIDER WHEN REVIEWING AUTHORIZED RETURNS?

A. Yes, there are. As noted in my Direct Testimony, utility credit ratings and outlooks depend substantially on the extent to which rating agencies view the regulatory environment credit supportive, or not. I noted, for example, that Moody's finds the regulatory environment to be so important that 50.00 percent of the factors that weigh in its ratings determination are determined by the nature of regulation.[169] Given the Company's need to access external capital and the weight rating agencies place on the nature of the regulatory environment, I believe it is important to consider the extent to which the jurisdictions that recently have authorized ROEs for electric utilities are viewed as having constructive regulatory environments.

Q. HAVE YOU REVIEWED AND UPDATED THE INFORMATION CONTAINED IN MR. CHRISS' EXHIBIT SWC-3?

A. Yes. As shown in Table 5 below (*see* also Rebuttal Exhibit No. RBH-17), I analyzed the authorized ROE for vertically integrated electric utilities based on the jurisdiction's ranking by Regulatory Research Associates ("RRA"). RRA, which is the source of Mr. Chriss' data, provides an assessment of the extent to which regulatory jurisdictions are constructive from investors' perspectives, or not. As

169 *See* Direct Testimony of Robert B. Hevert, at 60-61.

RRA explains, less constructive environments are associated with higher levels of risk:

> RRA maintains three principal rating categories, Above Average, Average, and Below Average, with Above Average indicating a relatively more constructive, lower-risk regulatory environment from an investor viewpoint, and Below Average indicating a less constructive, higher-risk regulatory climate from an investor viewpoint, Within the three principal rating categories, the numbers 1, 2, and 3 indicate relative position. The designation 1 indicates a stronger (more constructive) rating; 2, a mid range rating; and, 3, a weaker (less constructive) rating. We endeavor to maintain an approximately equal number of ratings above the average and below the average.[170]

South Carolina currently is ranked “Average/3”, which falls approximately in the bottom-third of the 53 jurisdictions ranked by RRA.

Across the 71 vertically integrated cases for which RRA reports an authorized ROE since 2016, there was a 47-basis point difference between the median return for jurisdictions ranked in the top third of all jurisdictions and jurisdictions ranked in the bottom third of all jurisdictions (the higher-ranked jurisdictions providing the higher authorized returns, *see* Table 5, below). As Table 5 indicates, authorized ROEs for vertically integrated electric utilities in jurisdictions rated in the top third of all jurisdictions range from 9.50 percent to 10.55 percent, with an average of 9.95 percent and a median of 9.97 percent.

[170] Source: Regulatory Research Associates, accessed March 4, 2019.

Table 5: Average Authorized ROE by RRA Ranking[171]

Authorized ROE Vertically Integrated Electric Utilities			
RRA Ranking	**Top Third**	**Middle Third**	**Bottom Third**
Mean	9.95%	9.45%	9.62%
Median	9.97%	9.50%	9.50%
Maximum	10.55%	9.60%	11.95%
Minimum	9.50%	9.20%	9.10%

My recommended range, 10.25 percent to 11.00 percent, therefore, is consistent with the returns authorized in more constructive jurisdictions.

Q. HAS MR. CHRISS CONSIDERED THE EFFECT OF HIS RECOMMENDATION ON THE COMPANY'S FINANCIAL PROFILE?

A. No, he has not. As discussed in my Direct Testimony, the financial community carefully monitors utility companies' financial conditions, both current and expected as well as the regulatory environment in which those companies operate.[172] Here, Mr. Chriss suggests that the Commission should reduce the Company's ROE by some unspecified amount without the benefit of market-based, comparative analyses to support that recommendation. The consequence of such an action likely would indicate an increased degree of regulatory risk. In my view,

[171] Excludes limited issue rider proceedings. Source: Regulatory Research Associates. "Top Third" includes Above Average/1,2,3 and Average/1; "Middle Third" includes Average/2; "Bottom Third" includes Average/3 and Below Average/1,2,3. The "Top Third" group and "Bottom Third" each include 19 of 53 jurisdictions. The "Middle Third" includes 15 jurisdictions. *See also* Rebuttal Exhibit No. RBH-17.

[172] *See* Direct Testimony of Robert B. Hevert, at 59-63.

Mr. Chriss has not reasonably considered the effect of his recommendation on the Company's financial profile, or on its ability to attract capital at reasonable terms.

Q. WHAT IS YOUR RESPONSE TO MR. CHRISS'S SUGGESTION THAT THE COMPANY'S PROPOSED GRID IMPROVEMENT PLAN RATES REDUCE ITS RISK?

A. For the reasons discussed in my response to Mr. Parcell, I disagree that the Company's rate mechanisms – including its request of deferred accounting treatment for its GIP – reduce its risk. The Company's rate structures affect the Company's Cost of Equity only if: (1) the effect of the mechanism was to reduce the Company's risk below that of its peers; and (2) investors knowingly reduced their return requirements as a direct consequence of the mechanisms. Because rating agencies and investors tend to focus on measures of profit and cash flow, relevant considerations are whether cash flow variability differs across companies and what those differences, if any, may imply for the Cost of Equity. As discussed in my response to Mr. Parcell, Mr. Chriss fails to consider that the Company's rate structures are more likely to be credit supporting rather than credit enhancing. That is, but for the rate structures, the Company's credit profile would come under pressure, likely increasing its cost of capital.

VI. RESPONSE TO THE DIRECT TESTIMONY OF MR. PAYNE

Q. HAVE YOU REVIEWED THE DIRECT TESTIMONY OF ZACHARY J. PAYNE WITH RESPECT TO ORS'S PROPOSED TREATMENT OF THE RECOVERY OF ACCOUNTING DEFERRALS REQUESTED BY THE COMPANY?

A. Yes. The Company has proposed adjustments 17, 18, 19, 25, 30, and 35 requesting recovery of various accounting deferrals in its revenue requirements. In the Direct Testimony of Laura Bateman, the Company includes various categories of capital-related and operating-related cost deferrals as regulatory assets in rate base to earn a fair return, along with the associated amortization in its revenue requirements. Mr. Payne recommends each deferral balance be separated into two categories: operating-related, and capital-related,[173] and that "the deferred cost of capital portion of the deferral balance [be allowed] in rate base" and "exclude the deferred [operating] expense from rate base".[174] He argues that "ORS's recommendation still allows the Company to recover its actual deferred costs through amortization of the proposed deferral balance which is a sufficient level of cost recovery."[175] Mr. Payne further argues that "[i]f the Company is allowed to include [operating] expense in rate base, the Company will earn a return on its [operating] expense".[176]

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173 Direct Testimony of Zachary J. Payne, at 4.
174 *Ibid.*, at 12. [clarification added].
175 *Ibid.*
176 *Ibid.*

Q. DO YOU AGREE WITH MR. PAYNE'S RECOMMENDATION TO EXCLUDE OPERATING COST REGULATORY ASSETS FROM RATE BASE?

A. No. I believe the Company's approach, which is to include operating cost regulatory assets in rate base, provides for a carrying charge on actual dollars that were financed by the Company.[177] In Mr. Payne's discussion of the Company's prior accounting orders,[178] he cites Governmental Accounting Standards Board ("GASB") statement No. 62, which states the utility should accrue carrying charges on the regulatory asset:

> During the period between the date on which the new asset is recognized and the date on which recovery begins, the carrying amount should be increased by accruing a carrying charge.[179]

Although Mr. Payne acknowledges that GASB establishes accounting standards for accruing a carrying charge on regulatory assets, he observes that ultimately, it is the Commission that determines the manner in which the utility is

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177 In my testimony, I address the financial consequences of Mr. Payne's recommendations. Company Witness Bateman discusses the specific accounting treatment and requested amortization periods for each adjustment.

178 In his Direct Testimony at page 3, Mr. Payne cites "Accounting orders are used by a utility to smooth earnings and rate recovery related to significant costs that arise from circumstances that are unexpected and/or non-recurring". While I generally agree with this statement, I believe it is important to also highlight several other criteria for an accounting order including: (1) the matching principle of matching large capital and operating costs with cost recovery in base rates; (2) earnings degradation from large capital and operating expenses; and (3) the Company's financial stability and ability to attract capital on reasonable terms. The Company included these arguments in its petition in Docket No. 2018-206-E - Duke Energy Progress, LLC and Duke Energy Carolinas LLC's Petition for an Accounting Order to Defer Certain Capital and Operated Expenses Related to Grid Reliability, Resiliency and Modernization, at 10-11.

179 Direct Testimony of Zachary J. Payne, at 3.

allowed to recover the costs. As discussed below, Mr. Payne's recommendation is counter to fundamental corporate finance principles.

Q. MR. PAYNE ACCEPTS THE COMPANY'S PROPOSAL TO INCLUDE CAPITAL-RELATED COSTS IN RATE BASE, BUT OPPOSES OPERATING-RELATED COSTS BECAUSE IN HIS VIEW, IT WOULD CAUSE THE COMPANY TO EARN A RETURN ON OPERATING COSTS.[180] DO YOU AGREE WITH MR. PAYNE ON THAT POINT?

A. No. The Company proposes to include operating-related deferred costs such as operation and maintenance and property taxes in rate base to earn a fair return at the Company's weighted-average cost of capital, which would only make it whole on an economic basis. Because the expenditures required actual cash outflows, the Company has incurred financing costs for these deferred costs. If it is not authorized to include these costs in rate base and earn a return on them, the Company will suffer a negative net present value, which would be borne by its investors.

Q. PLEASE EXPLAIN WHY THE COMPANY WILL INCUR A NET PRESENT VALUE LOSS IF THE OPERATING-RELATED COSTS ARE NOT INCLUDED IN RATE BASE.

A. The Company's proposal to include operating-related regulatory assets in rate base

[180] Direct Testimony of Zachary J. Payne, at 12.

is analogous to corporate finance discounted cash flow valuation. Discounted cash flow valuation includes both the "return of" and "return on" to calculate the present value of an investment. The concepts of "return of" and "return on" can be seen in the methods used, for example, in valuing a bond. To derive the present value of a bond, the amortization, or "return of" principal, and the interest, or "return on", both must be included to correctly calculate the value. Table 6, below, provides an illustrative example of that process for a hypothetical five-year bond valued at $10 million.[181] Importantly, when interest is excluded from the calculation, there is a significant reduction in the present value (in this hypothetical case, 13.41 percent).

Table 6: Discounted Cash Flow Valuation of Hypothetical Bond[182]

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Beginning Principal		$10,000,000	$8,000,000	$6,000,000	$4,000,000	$2,000,000	
Amortization (5-Yr Straight-Line)		2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	
Ending Principal	$10,000,000	$8,000,000	$6,000,000	$4,000,000	$2,000,000	$0	
Interest @ 5.00%		$500,000	$400,000	$300,000	$200,000	$100,000	
Present Value of Amortization & Interest							
Amortization + Interest		$2,500,000	$2,400,000	$2,300,000	$2,200,000	$2,100,000	
Discount Factor (1/(1+Interest)^Year)		0.95 x	0.91 x	0.86 x	0.82 x	0.78 x	
Present Value		$2,380,952	$2,176,871	$1,986,826	$1,809,945	$1,645,405	$10,000,000
Present Value of Amortization Only							
Amortization		$2,000,000	$2,000,000	$2,000,000	$2,000,000	$2,000,000	
Discount Factor (1/(1+Interest)^Year)		0.95 x	0.91 x	0.86 x	0.82 x	0.78 x	
Present Value		$1,904,762	$1,814,059	$1,727,675	$1,645,405	$1,567,052	$8,658,953
Reduction in Present Value							-13.41%

181 I have assumed straight-line amortization of 5-years, a coupon rate of 5.00 percent and year-end repayments.

182 Please note that Equation [2], which provides the "intrinsic value" formula for common equity, is the same construct as that which is applied in Table 6.

This example illustrates the same concept as including operating-related costs in rate base. The amortization, or "return of", of the regulatory asset is not a "sufficient level of cost recovery", as Mr. Payne suggests. Rather, because the Company has expended cash for these operating costs upfront, a carrying charge is necessary to recover these expenditures at cost on a present value basis.

Q. DO YOU AGREE WITH MR. PAYNE'S POSITION THAT INCLUDING OPERATING-RELATED COSTS IN RATE BASE CAUSES THE COMPANY TO EARN A RETURN ON THESE COSTS?

A. No, I do not. Although the Company does accrue a carrying charge on those deferred costs, carrying charges reflect the economic value required to avoid a loss in present value. From a somewhat different (but related) perspective, the carrying charge reflects the financing costs associated with the initial cash outlay. Absent the carrying charge, the Company's financial profile would be diminished.

Q. MR. PAYNE ALSO CITES DEFERRED DEPRECIATION EXPENSE AS AN OPERATING-RELATED COST THAT SHOULD NOT BE INCLUDED IN RATE BASE.[183] DO YOU AGREE WITH MR. PAYNE'S POSITION?

A. No, I view deferred depreciation expense as having financial implications analogous to capital-related costs, in that both represent a cash outlay that must be financed. Mr. Payne's proposal to exclude depreciation-related regulatory assets

183 Direct Testimony of Zachary J. Payne, at 11, 12, and 15.

from rate base prevents the Company from being able to earn a fair return on its original capital costs that were deferred as a regulatory asset.

Q. DO THE PRINCIPLES OF "RETURN OF" AND "RETURN ON" DISCUSSED ABOVE APPLY TO DEFERRED DEPRECIATION EXPENSE?

A. Yes, they do. In Table 6 above, I illustrated how the amortization, or "return of", and interest, or "return on", were both required to equate to the present value of a bond. The same concepts apply to plant-related investments. If "depreciation" is substituted for "amortization" and the "weighted average cost of capital" is substituted for "interest" in Table 6, we arrive to the exact conclusion: Absent the carrying charge component, the Company suffers a present value loss.

Similarly, I noted earlier that operation and maintenance expense, and property taxes reflect actual cash outlays that financed by the Company. Deferred depreciation expense is the same. The Company has incurred financing costs for deferred depreciation expense, and without carrying charges would suffer a dilution in value (that is, a negative net present value). The carrying charge simply offsets those effects.

VII. SUMMARY OF UPDATED RESULTS AND CONCLUSION

Q. PLEASE SUMMARIZE YOUR UPDATED ROE ANALYSES AND RESULTS.

A. I have updated many of the analyses contained in my Direct Testimony with current data as of February 15, 2019, including the Constant Growth and Multi-Stage Discounted Cash Flow analyses, the Capital Asset Pricing Model, the Empirical CAPM, and the Bond Yield Plus Risk Premium approach. I also have updated my proxy group based on recent data to include Evergy, Inc.[184] My updated analytical results are provided in Table 7 below.

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184 As enough time has passed since the merger between Great Plains Energy, Inc. and Westar Energy, Inc. to form Evergy, Inc., I have included Evergy, Inc. in my proxy group.

Table 7: Summary of Analytical Results

Constant Growth DCF	**Low**	**Mean**	**High**
30-Day Average	8.47%	9.33%	10.30%
90-Day Average	8.49%	9.35%	10.32%
180-Day Average	8.57%	9.43%	10.40%
Multi-Stage DCF (Gordon Growth)	***Low***	***Mean***	***High***
30-Day Average	8.71%	8.93%	9.19%
90-Day Average	8.73%	8.95%	9.21%
180-Day Average	8.81%	9.03%	9.30%
CAPM Results		**Bloomberg Derived Market Risk Premium**	**Value Line Derived Market Risk Premium**
Average Bloomberg Beta Coefficient			
Current 30-Year Treasury (3.03%)		8.36%	10.04%
Near Term Projected 30-Year Treasury (3.33%)		8.65%	10.33%
Average Value Line Beta Coefficient			
Current 30-Year Treasury (3.03%)		9.37%	11.37%
Near Term Projected 30-Year Treasury (3.33%)		9.67%	11.67%
ECAPM Results		**Bloomberg Derived Market Risk Premium**	**Value Line Derived Market Risk Premium**
Average Bloomberg Beta Coefficient			
Current 30-Year Treasury (3.03%)		9.71%	11.81%
Near Term Projected 30-Year Treasury (3.33%)		10.00%	12.11%
Average Value Line Beta Coefficient			
Current 30-Year Treasury (3.03%)		10.47%	12.81%
Near Term Projected 30-Year Treasury (3.33%)		10.77%	13.11%
	Low	**Mid**	**High**
Bond Yield Plus Risk Premium	9.93%	9.98%	10.17%

Q. WHAT IS YOUR CONCLUSION REGARDING THE COMPANY'S COST OF EQUITY?

A. Based on the analyses discussed throughout my Rebuttal Testimony, and the results summarized in Table 7, I conclude the reasonable range of ROE estimates is from 10.25 percent to 11.25 percent; within that range, 10.75 percent is reasonable, and the Company's proposed ROE of 10.50 percent is a somewhat conservative estimate of the Company's Cost of Equity.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.